SOUTHWEST ALASKA
TRANSPORTATION PLAN

EXISTING CONDITIONS TECHNICAL MEMORANDUM

prepared for the

Alaska Department of Transportation and Public Facilities

prepared by

Parsons Brinckerhoff

in association with

HDR Alaska, Inc.
Northern Economics
The Glosten Associates, Inc.
Ogden Beeman & Associates, Inc.

April 1998

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES AND EXHIBITS

1. INTRODUCTION

1.1 PURPOSE

The purpose of this Technical Memorandum is to clearly define and understand current transportation conditions, trends, problems and issues in the study area based on a review of available data and previous planning efforts. The existing conditions of the region are documented in subsequent sections outlining current physical, socio-economic and transportation system conditions.

1.2 STUDY BACKGROUND

This study is preparing a regional transportation plan for Southwest Alaska. This plan is part of a series of regional transportation plans being developed by the Alaska Department of Transportation and Public Facilities (DOT&PF). DOT&PF's goal is for each regional plan to serve as an elaboration of the Statewide Transportation Plan, *Vision: 2020*, that will focus on identifying projects that, over the life of the plan, will be included in the Statewide Transportation Improvement Program (STIP), Aviation Improvement Program (AIP), and Harbors Improvement Program (HIP).

The transportation plan will encompass the following transportation modes: highway, air, and marine transportation. It will contain a set of recommended multi-modal transportation system improvements for addressing needs and improving the movement of people, vehicles and freight between communities within the region, and between the region and elsewhere in Alaska and outside Alaska. The plan will focus primarily on commercial transportation and on connections between modes. The plan's recommended improvements will be phased through the year 2020 and accompanied by a range of alternative financial strategies based on different levels of investment. The plan will be used by DOT&PF to guide its decisions regarding operational and capital improvements for the region.

2. PHYSICAL CONDITIONS

2.1 STUDY AREA LOCATION AND SIZE

The study area for the Southwest Alaska Transportation Plan includes the Alaska Peninsula, Kodiak and neighboring islands, the Aleutian Islands, the Bristol Bay area, and the Pribilof Islands. Figure 1 shows the limits of the study area. Including water area, the region encompasses a geographical area over 1,000 miles in length and nearly 400 miles in width. For the purposes of this study, the study area is divided into the following six planning areas:

Aleutians East Borough – including the following communities: Akutan, Cold Bay, False Pass, King Cove, Nelson Lagoon, and Sand Point.

Aleutians West Census Area – including the following communities and/or *facilities*: *Adak Station*, Amchitka, Atka, *Attu Coast Guard Station*, Nikolski, Saint George, Saint Paul, *Shemya Station/Eareckson Air Force Base,* and Unalaska.

Bristol Bay Borough – including the following communities: King Salmon, Naknek, and South Naknek.

Dillingham Census Area – including the following communities: Aleknagik, Clarks Point, Dillingham, Ekuk, Ekwok, Koliganek, Manokotak, New Stuyahok, Portage Creek, Togiak, and Twin Hills.

Kodiak Island Borough – including the following communities and/or *facilities*: Akhiok, Chiniak, Karluk, Kodiak, *Integrated Support Command–Kodiak,* Larsen Bay, Old Harbor, Ouzinkie, Port Lions, and Womens Bay.

Lake and Peninsula Borough – including the following communities: Chignik, Chignik Lagoon, Chignik Lake, Egegik, Igiugig, Iliamna, Ivanof Bay, Kokhanok, Levelock, Newhalen, Nondalton, Pedro Bay, Perryville, Pilot Point, Port Alsworth, Port Heiden, and Ugashik.

2.2 REGIONAL OVERVIEW

The majority of the Southwest Alaska region's land portion is contained in the Alaska Peninsula and the mainland areas adjacent to Bristol Bay. Kodiak Island, the Aleutian Islands and the Pribilof Islands comprise the remainder of the land portions.

In general the terrain in the region is very diverse and rugged, making the movement of persons and goods difficult and costly. The physical attributes combined with the great distances separating communities make this region one of the more remote in Alaska. Also, due to these physical conditions, the primary modes of regional transportation are via air and water. The water portions of the region are rich in marine life and fishing plays a primary role in the region's economy. Tourism, in selected areas, is also beginning to play a significant role in the economy of the region.

The Alaska Peninsula extends 500 miles southwest from the western shore of Cook Inlet to its tip at False Pass. From there the Aleutian Islands, a chain of over 200 islands, curve another

1,000 miles west, separating the North Pacific from the Bering Sea. These areas are characterized by more than 60 active and dormant volcanoes and a relatively treeless landscape. Terrain is rugged with precipitous shorelines along the southern side of the Alaska Peninsula and the Aleutians. The largest community in these areas is Unalaska.

The Pribilof Islands are a group of four islands located approximately 250 miles north of Unalaska in the Bering Sea. The two major islands are Saint Paul and Saint George. The town of Saint Paul, located on Saint Paul Island, is the largest community in the islands.

The Bristol Bay area covers an area of approximately 40,000 square miles including the drainage basins of the Togiak, Egegik, Krichak, Ugashik, Nushagak and Naknek Rivers; Iliamna and Becharof Lakes; and the glacial Wood River-Tikchik Lake area. Two mountain ranges, the Ahklun Mountains to the north, and the Aleutian range to the southeast, surround Bristol Bay forming an extensive river and lake system serving as the nursery for the valuable Bristol Bay salmon runs. The largest community in the greater Bristol Bay area is Dillingham.

The Kodiak area is dominated by Kodiak Island. At 3,588 square miles, Kodiak Island is the largest island in the state of Alaska. Terrain on the island is generally mountainous with deeply indented coastlines. The City of Kodiak is the largest community on the island and serves as the distribution center for other nearby communities including Port Lions, Womens Bay, Old Harbor, Larsen Bay, Chignik, Karluk, Akiak, and Ouzinkie. Other islands in the area include Afognak, Sitkalidak, Shuyak, and the Trinity Islands.

The majority of the study area lies within the maritime climatic zone. Weather patterns here are influenced by conditions caused by the confluence of the arctic waters of the Bering Sea and the relatively warmer waters of the North Pacific. This confluence contributes to heavy precipitation, frequent fog, high winds, and moderate temperatures in the region. Strong surface winds are also typical in the coastal regions. These winds are highly variable and often localized due to frequent storm passages and mountainous terrain. Average wind speeds over the eastern and central areas of the Aleutian Islands range from 15 to 20 knots; while over the Alaska Peninsula winds are slightly less strong, averaging from 10 to 15 knots. The strong winds and frequent storms contribute to frequent rough sea conditions in the region, making marine navigation difficult and dangerous at times. Temperatures during the summer months may reach into the 50's along the Aleutian Islands, with somewhat warmer temperatures along the peninsula. In the winter months, regional temperatures are often in the 20s or lower. However, despite these low temperatures, the relatively warm waters of the Alaska Current keep the south shores of the Aleutian Islands and Alaska Peninsula ice free year round. Detached ice is frequently encountered during the winter near the Pribilof Islands however, and the northern coast of the Alaska Peninsula as well as Bristol Bay periodically experience 100 percent ice coverage along inlets and bays.

3. SOCIO-ECONOMIC CONDITIONS

Southwest Alaska as defined in this study encompasses 52 communities, shown in Figure 1. These communities range from Kodiak in the east to Adak at the western end of the Aleutians, and north to Dillingham. The study communities vary from two of the largest seafood ports by volume in the world to some of most isolated villages in the United States. The social and economic conditions vary to the same degree. The following sections briefly summarize the history of the region, discuss existing government structures and native corporations, summarize community profiles, and provide an overview of the region's population and economic trends.

3.1 SOCIO-POLITICAL BACKGROUND

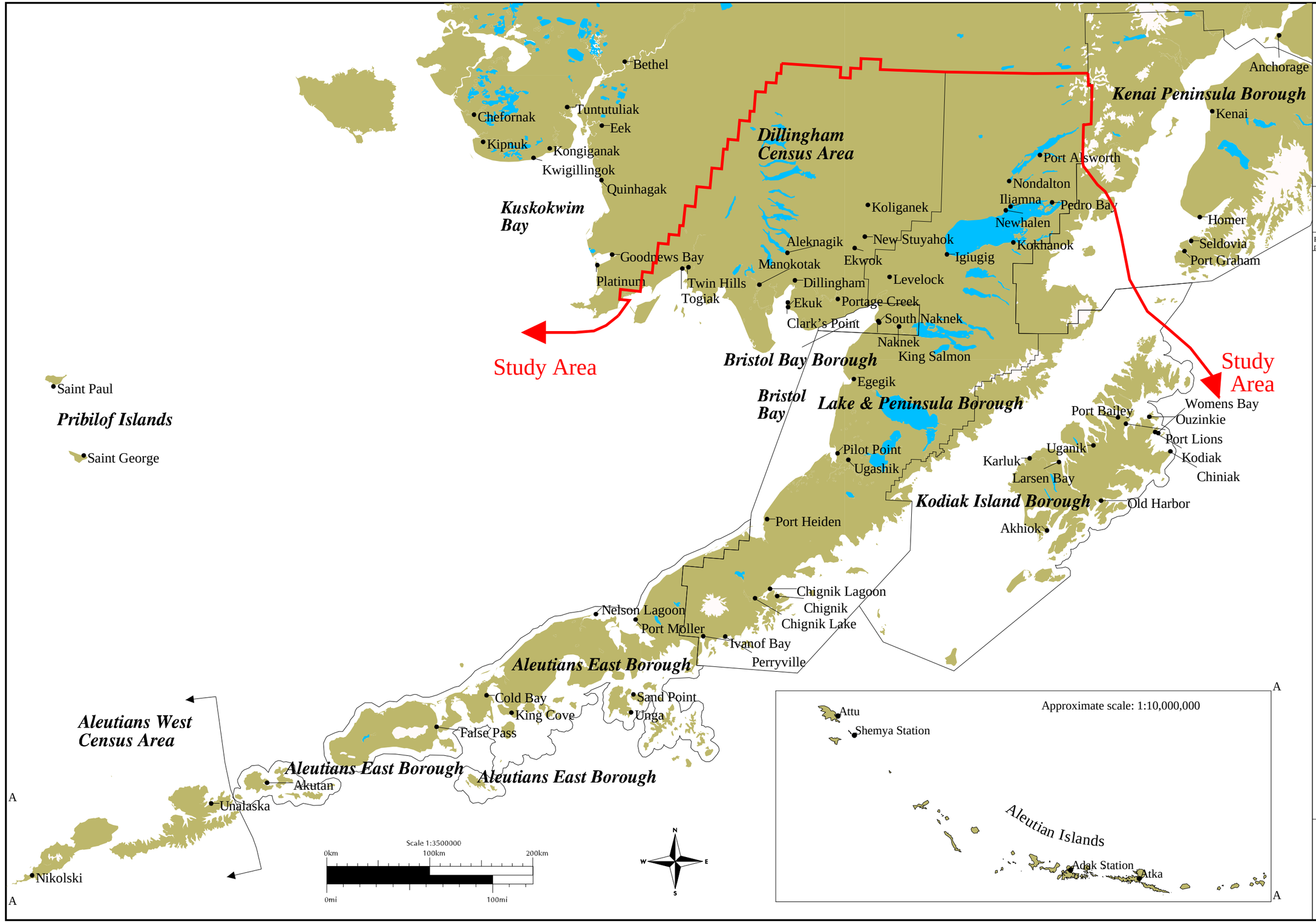
History

The earliest inhabitants of Southwest Alaska are believed to have arrived anywhere from 6,000 to 20,000 years ago. The native Aleuts lived throughout the Aleutian Islands and the Alaska Peninsula. Other native peoples in Southwest Alaska include the Yup'ik Eskimo and Athabascan Indians. Prior to the first contact with Europeans, practically every island throughout the region was inhabited. Europeans first arrived in the region in the mid-1700s, and the United States made its first contact in the mid-1800s. The Aleutian Islands were occupied by the Russians from the late 1700s until the late 1800s, with the primary economic resource being fur from marine mammals.

In 1867 Russia sold Alaska to the United States. Seal and otter hunting, fishing, and whaling, were at that time the primary sources of income for the region's population. Unalaska, also referred to as Dutch Harbor, was a major center for the sea otter fur trade. It then became a coaling station in the 1880s, and a commercial harbor for miners during the Klondike gold rush in the 1890s. Commercial arctic fox farming was predominant throughout the islands in the early 1900s. However, the collapse of the fur market in the 1920s, and the general collapse of the U.S. economy in the 1930s left the region in a severe economic depression.

World War II made a significant impact on the region. In 1939 the U.S. built Navy and Army installations at Dutch Harbor and at one time up to 60,000 service personnel were stationed there. In June 1942 the Japanese opened their Aleutian Islands campaign by bombing Dutch Harbor, and then seizing Attu and Kiska Islands. The invasion brought additional development of military installations throughout the region, including significant facilities at Cold Bay, Umnak, Chernofski, Atka, Adak, Amchitka, Shemya, St. Paul, and Attu. Other significant military facilities were built at Port Heiden, Iliamna, and King Salmon

Subsequent to the war, fisheries became the major factor in the region's improved economy. Primary activity in the region is concentrated in Unalaska/Dutch Harbor (deepwater crab and bottomfish), Bristol Bay (salmon), and Kodiak (previously crab, now salmon and groundfish); however, additional fishing and seafood processing takes place in smaller communities throughout the region. The tourism industry has recently begun to take form in selected locations throughout the region and is expected to eventually play a more significant role in the region's economy.


Bethel
Tuntutuliak
Chefornak
Eek
Kipnuk
Kongiganak
Kwigillingok
Quinhagak
Kuskokwim Bay
Dillingham Census Area
Goodnews Bay
Platinum
Twin Hills
Togiak
Manokotak
Aleknagik
Ekwok
Koliganek
New Stuyahok
Igiugig
Dillingham
Levelock
Ekuk
Portage Creek
Clark's Point
South Naknek
Naknek
King Salmon
Bristol Bay Borough
Egegik
Bristol Bay
Lake & Peninsula Borough
Pilot Point
Ugashik
Port Heiden
Study Area
Anchorage
Kenai Peninsula Borough
Kenai
Port Alsworth
Nondalton
Iliamna
Pedro Bay
Newhalen
Kokhanok
Homer
Seldovia
Port Graham
Study Area
Port Bailey
Womens Bay
Ouzinkie
Port Lions
Kodiak
Chiniak
Uganik
Karluk
Larsen Bay
Kodiak Island Borough
Old Harbor
Akhiok
Chignik Lagoon
Chignik
Chignik Lake
Nelson Lagoon
Port Moller
Ivanof Bay
Perryville
Aleutians East Borough
Cold Bay
King Cove
False Pass
Sand Point
Unga
Aleutians East Borough
Aleutians East Borough
Akutan
Unalaska
Nikolski
Aleutians West Census Area
Saint Paul
Pribilof Islands
Saint George
A
A
Scale 1:3500000
0km
100km
200km
0mi
100mi
N
W
E
S
Approximate scale: 1:10,000,000
Attu
Shemya Station
Aleutian Islands
Adak Station
Atka
A
A
Area of Map
Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers
TRANSPORTATION & PUBLIC FACILITIES
STATE OF ALASKA
HDR Alaska
PB 100 YEARS
File: pltsw302.aml
Date: 10/22/97
By: PKW
Study Area
Southwest Alaska Transportation Plan
Existing Conditions Technical Memorandum
FIGURE 1

Existing Governing Structures

BOROUGHS

In its governmental structures, Alaska is unique in that most of its land area has not been organized into political subdivisions equivalent to the county form of government. Local government is by a system of organized boroughs, much like counties in other states. However, large portions of the state, including some areas within Southwest Alaska, are not included in any borough because of sparse population. Boroughs, which are categorized into three classes, generally provide a more limited number of services than cities. First and second class boroughs have three mandatory powers: education, land use planning, and tax assessment and collection. They have separately elected borough assemblies and school boards. A first-class borough which has adopted a home rule charter is called a home rule borough. Adoption of the charter allows it to revise its ordinances, to the extent that the powers it assumes are not prohibited by law. Third-class boroughs have two mandatory powers: operation of public schools and taxation. All boroughs may assess, levy and collect real and personal property taxes. They may also levy sales taxes. There are four boroughs within the Southwest Alaska region, including:

- Aleutians East Borough (Second Class)
- Bristol Bay Borough (Second Class)
- Kodiak Island Borough (Second Class)
- Lake and Peninsula Borough (First Class, Home Rule)

Areas in the region not included within an organized borough include the Aleutians West Census Area and the Dillingham Census Area. Of note is that the region's second and third largest communities, Unalaska and Dillingham, are located in these areas outside of any organized borough.

CITIES

Incorporated cities are small units of local government serving one community. First-class cities have six-member councils and a separately elected mayor. Taxing authority is generally broader than for second-class cities, as are responsibilities. Second-class cities, generally communities of less than 400 population, are governed by a seven-member council, one of whom serves as mayor. Taxing authority is limited. First class cities within the Southwest Alaska region include:

- Dillingham
- King Cove
- Kodiak (also a Home Rule city)
- Sand Point
- Unalaska

Native Corporations

As part of the Alaska Native Claims Settlement Act (ANCSA) of 1971, the U.S. government created the Alaska Native Corporations to manage money and land received from the government. In all, ANCSA established 13 regional corporations (12 in Alaska and one to

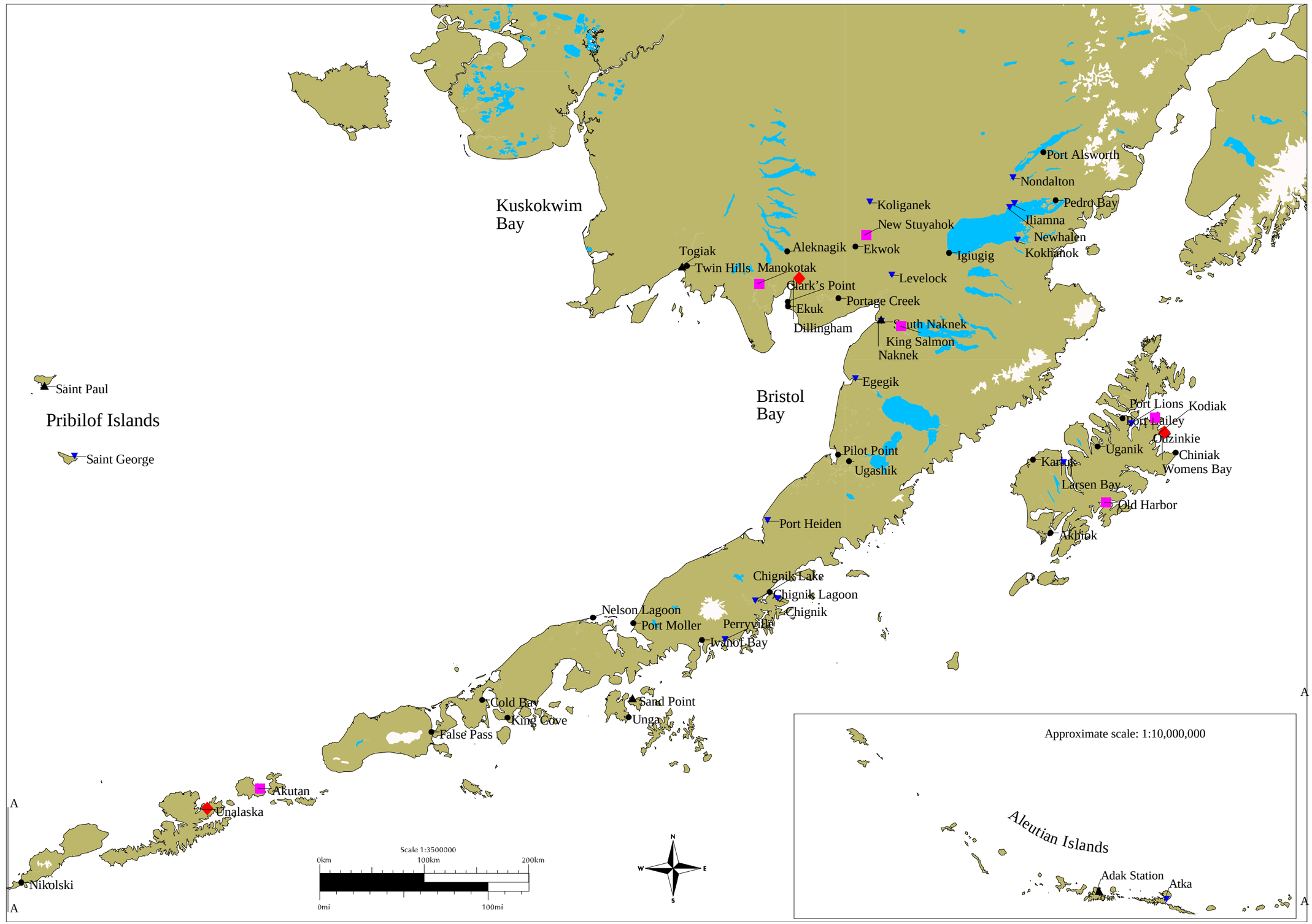
represent Alaska natives residing outside of Alaska). Native corporations are cooperatively structured, i.e., they are member-owned with democratically controlled boards organized on a one-member, one-vote basis. In addition to the regional corporations, under ANCSA eligible Native villages were required to form village corporations and, by 1974, to choose lands made available by the settlement act. Over 200 village corporations were formed at that time.

The Southwest Alaska region contains three regional native corporations and 50 village corporations. The regional and village native corporations are as listed in Table 3.1.

Table 3.1
Southwest Alaska Native Corporations

Regional Corporation	Village Corporations	
Aleut Corporation (Aleutian Islands)	• Akutan • Atka • Belkofski • False Pass • King Cove • Nelson Lagoon	• Nikolski • St. George • St. Paul • Sand Point • Unalaska • Unga
Bristol Bay Native Corporation (Bristol Bay area and parts of the Alaska Peninsula)	• Aleknagik • Chignik • Chignik Lagoon • Chignik Lake • Clarks Point • Dillingham • Egegik • Ekuk • Ekwok • Igiugig • Iliamna • Ivanof Bay • Kokhanok • Koliganek • Levelock	• Manokotak • Naknek • Newhalen • New Stuyahok • Nondalton • Pedro Bay • Perryville • Pilot Point • Portage Creek • Port Heiden • South Naknek • Togiak • Twin Hills • Ugashik
Koniag, Incorporated (Kodiak Island and surrounding area)	• Afognak • Akhiok • Kaguyak • Karluk • Larsen Bay	• Old Harbor • Ouzinkie • Port Lions • Woody Island

Source: The Alaska Almanac, Facts About Alaska, 17th Edition, Alaska Northwest Books, 1993.



TRANSPORTATION & PUBLIC FACILITIES • STATE OF ALASKA •

HDR Alaska | PB 100 YEARS

File:	Date:	By:
swpop01.aml	11/10/97	PKW

Legend

Population (1996)

- *more than 1000*
- *between 500 and 999*
- *between 250 and 499*
- *between 100 and 249*
- *between 0 and 99*

Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers

1996 Population

Southwest Alaska Transportation Plan

Existing Conditions Technical Memorandum

FIGURE 2

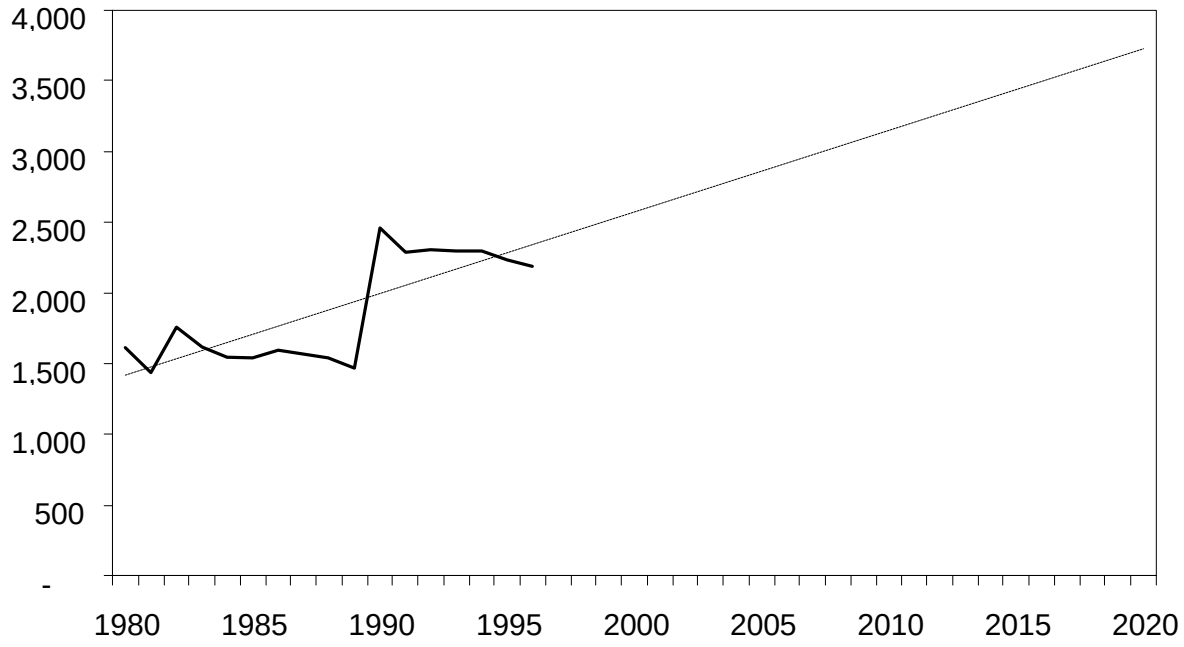
Aleutians East Borough

Since 1970, the combined population of the communities which currently compose the Aleutians East Borough has fluctuated from a low of 822 individuals in 1970 to a high of 2,464 individuals in 1990. The increase in regional population is primarily attributable to the growth of the commercial fishing industry in the region and the presence of federal, state, and local government organizations. Between 1990 and 1996, the population of Cold Bay declined by 39 percent. This drop is partially attributable to reductions in federal employment associated with the airport in the community. In the same period, the city of Akutan experienced a 30 percent loss in population due in part to reductions in seafood processing employment in the city. Future reductions in borough population are possible as a result of declining federal and state government expenditures in the region and enhanced international competition in the global salmon market. Table 3.2 shows the population of communities within the Aleutians East Borough since 1970. Because the Aleutians East Borough was not formed until 1987, the historical population of borough was estimated by adding the population of the communities that currently compose the borough in 1970 and 1980. The graph that follows, as Exhibit 3.1, shows the change in population in the borough since 1980 and the projected change in population (using a linear trendline) through 2020. Appendix A contains similar graphs for each of the borough's individual communities.

Table 3.2
Population of Communities in the Aleutians East Borough – 1970-1996

Community	1970	1980	1990	1996
Akutan	101	169	589	414
Cold Bay	256	228	148	90
False Pass	62	70	69	70
King Cove	283	460	677	705
Nelson Lagoon	43	59	83	79
Sand Point	360	625	878	808
Specified Communities Total	1,105	1,611	2,444	2,166
Actual Borough/Census Area			2,464	2,214
Census Area/Borough as Currently Configured (Estimated)	1,105	1,611	2,464	2,214

Exhibit 3.1
Change in Population in the Aleutians East Borough Since 1980



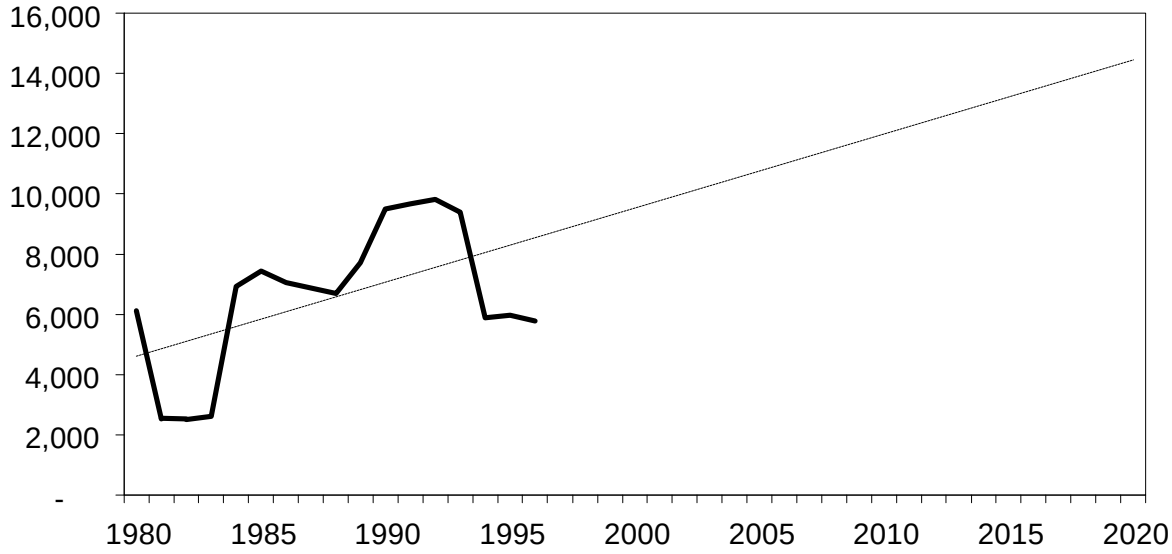
Aleutians West Census Area

Over the last two decades, the population of the Aleutians West Census Area has grown in response to the continued development of the deep sea fisheries of the Bering Sea and the sustained presence of military installations. The population for the Aleutians West Census Area was nearly 9,500 in 1990, but declined sharply in response to the 1994 announcements of the closings of the U.S. Naval Air Station based in Adak and Eareckson Air Force Base (AFS) on Shemya Island. Adak experienced an 84 percent decline in population in 1994, and Eareckson AFS' population slipped from 534 residents in 1993 to 15 inhabitants in 1996, a 97 percent decline. Over the last decade, the population of Unalaska, the regional hub of the Aleutian Islands, has fluctuated from a low population of 1,131 in 1985 to a high population of 4,087 in 1996. Development of the Bering Sea bottomfish and crab fisheries accounts for much of this growth. Modest continued population growth is projected and will remain strongly tied to the continued health of the Bering Sea fishing industry. An ongoing shortage of adequate housing in Unalaska is expected to partially limit the extent of permanent population growth in the community. Table 3.3 shows the population of the communities which currently compose the Aleutians West Census Area since 1970. The historical population of the census area (prior to the formation of the Aleutians East Borough in 1987) was estimated by adding the population of the communities that currently compose the census area in 1970 and 1980. The graph that follows, as Exhibit 3.2, shows the change in population in the communities since 1980 and the projected change (using a linear trendline) through 2020. Appendix A contains similar graphs for each of the individual communities in the census area.

Table 3.3
Population of Communities in the Aleutians West Census Area – 1970-1996

Community	1970	1980	1990	1996
Adak Station	4,022	3,315	4,633	596
Atka	88	93	98	106
Nikolski	57	50	35	27
St. George	163	158	138	157
St. Paul	450	551	763	739
Unalaska	342	1,322	3,089	4,087
Specified Communities Total	5,122	5,489	8,756	5,712
Actual Borough/Census Area			9,478	5,366
Census Area/Borough as Currently Configured (Estimated)	6,282	6,118	9,478	5,366

Exhibit 3.2
Change in Population in the Aleutians West Census Area
Since 1980



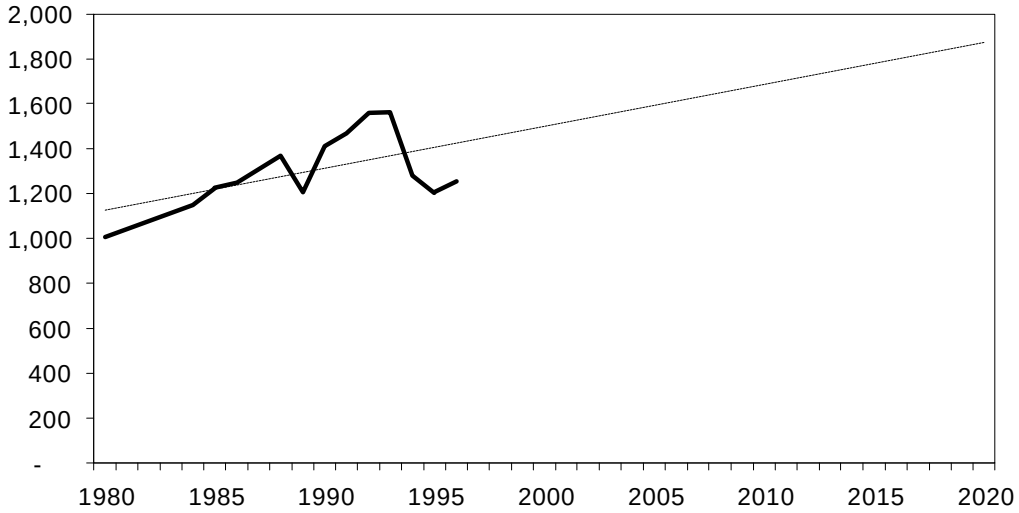
Bristol Bay Borough

The 1996 population of the Bristol Bay Borough was reported by ADOL at 1,255 individuals. However, during summer the local population swells to 5,000 due to Bristol Bay fishing and processing activity. In the 1990s, the total population has fluctuated from a low of 1,204 in 1995 to a high of 1,561 in 1993. Over the past six years, the region has seen a slight decline in population, mostly due to the closure of King Salmon Air Force Base in 1994. The largest community within the Bristol Bay Borough is Naknek, which had a 1996 population of 627 residents. King Salmon had a slightly lower 1996 population of 467, while South Naknek had 157 inhabitants. Naknek and South Naknek are the fishing and processing hubs of the borough, while King Salmon provides air taxi operations that support the surrounding communities. Future population growth is expected to remain tied to the level of government employment in the area and the continued, seasonal health of the Bristol Bay sockeye salmon industry. Table 3.46 shows the population of the communities that compose the Bristol Bay Borough since 1970. The graph that follows, as Exhibit 3.3, shows the change in population in the communities since 1980 and the projected change (using a linear trendline) through 2020. Appendix A contains similar graphs for each of the individual communities in the borough.

Table 3.4
Population of Communities in the Bristol Bay Borough – 1970-1996

Community	1970	1980	1990	1996
King Salmon	202	545	696	467
Naknek	318	317	575	627
South Naknek	154	145	136	157
Specified Communities Total	674	1,007	1,407	1,251
Actual Borough/Census Area	1,100	1,094	1,410	1,255

Exhibit 3.3
Change in Population in the Bristol Bay Borough Since 1980



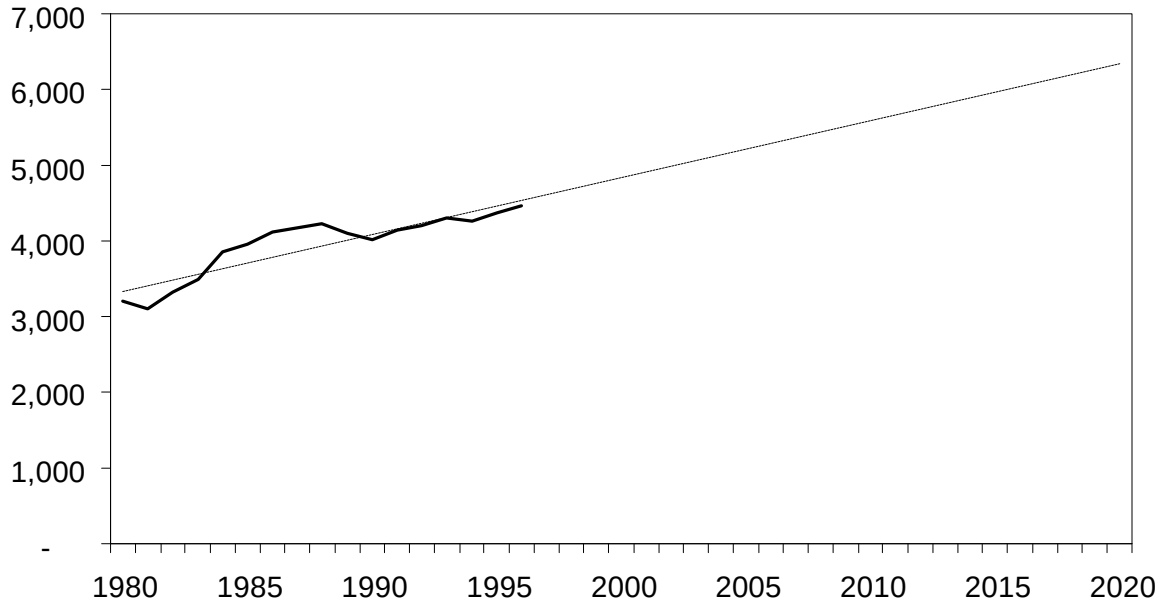
Dillingham Census Area

The Dillingham Census Area is home to non-Natives, Aleuts, Eskimos, and Athabascan Indians. ADOL reported a total census area population of 4,462 in 1996, with nearly half of those residents living in the town of Dillingham. The next largest community in the census area was Togiak, with a reported population of 740. The population of Dillingham has grown only slightly since the mid-1980s. The 1985 population of the city of Dillingham was reported at 2,141 residents, while the 1996 population was reported at 2,226 residents. Modest population growth is projected in the future. As in the nearby Bristol Bay Borough, population growth is expected to remain closely tied to the level of government employment in the region and the health of the seasonal sockeye salmon industry. Table 3.57 shows the population of select communities within the Dillingham Census Area since 1970. The historical population of census area (prior to the formation of the Lake and Peninsula Borough in 1989) was estimated by adding the population of the communities that currently compose the census area in 1970 and 1980. The graph that follows, as Exhibit 3.4, shows the change in population in the communities since 1980 and the projected change (using a linear trendline) through 2020. Appendix A contains similar graphs for each of the individual communities in the census area.

Table 3.5
Population of Communities in the Dillingham Census Area – 1970-1996

Community	1970	1980	1990	1996
Alekangik	128	154	185	190
Clark's Point	95	79	60	66
Dillingham	914	1,563	2,017	2,226
Ekuk	51	0	3	3
Ekwok	103	77	77	84
Koliganek	142	117	181	210
Manokotak	214	294	385	396
New Stuyahok	216	331	391	442
Portage Creek	N/A	48	5	6
Togiak	383	470	613	740
Twin Hills	67	70	66	67
Specified Communities Total	2,313	3,203	3,983	4,430
Actual Borough/Census Area			4,012	4,481
Census Area/Borough as Currently Configured (Estimated)	2,313	3,203	3,983	4,430

Exhibit 3.4
Change in Population in the Dillingham Census Area Since 1980



Kodiak Island Borough

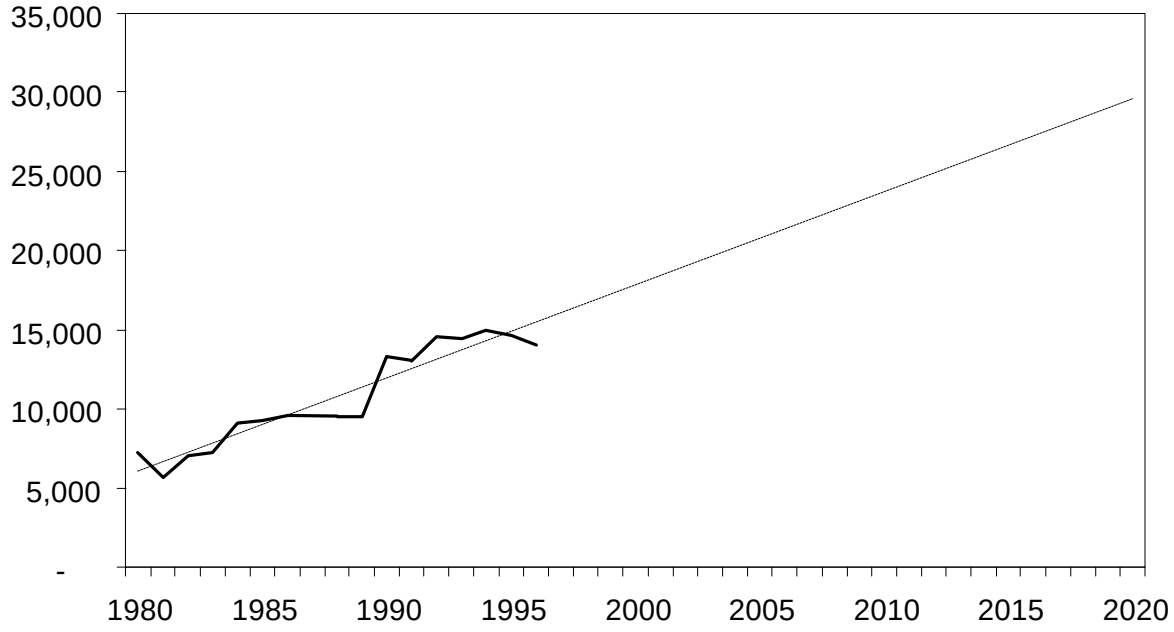
The 1996 population of the Kodiak Island Borough was reported by ADOL at 14,028 individuals. Since 1970, the total population has fluctuated from a low of 9,200 in 1972 to a high of nearly 15,000 in 1994. A large transient workforce is often present on the island. The largest community within the borough is the city of Kodiak which had a population of 6,869 in 1996. The gradual growth in population partially reflects the continued development of the seafood industry on the island. Between 1990 and 1996, the population of the city of Kodiak and Womens Bay each grew by a modest 8 percent. In the same period, the population of Ouzinkie grew by 24 percent partially reflecting recent harbor development activity in the community. Like the rest of Southwest Alaska, future population change will remain linked to the commercial fishing industry and government employment. Another notable development with potential population impacts is the Kodiak Launch Complex project, slated for construction at Narrow Cape. However, population growth driven by such kinds of development has been tempered by population decreases due to military cutbacks (including to the Coast Guard) in the area. Another notable development within potential population impacts is the Kodiak Launch complex project, slated for construction at Narrow Cape. However, population growth driven by the Post-Cold War era development has been tempered by military cutbacks, including the Coast Guard. Table 3.6 shows the population of select communities within the Kodiak Island Borough since 1970. The graph that follows, as Exhibit 3.5, shows the change in population in the communities since 1980 and the projected change (using a linear trendline) through 2020. Appendix A contains similar graphs for each of the individual communities in the borough.

Table 3.6
Population of Selected Communities in the Kodiak Island Borough – 1970-1996

Community	1970	1980	1990	1996
Akhiok	115	105	77	84
Chiniak	0	0	69	75
Karluk	98	96	71	57
Kodiak	3,798	4,756	6,365	6,869
Larsen Bay	109	168	147	127
Old Harbor	290	340	284	316
Ouzinkie	160	173	209	259
Port Lions	227	215	222	234
Womens Bay	0	0	620	672
Specified Communities Total	4,797	5,853	8,064	8,693
Actual Borough/Census Area	9,600	9,939	13,309	14,062

Exhibit 3.5

Change in Population in the Kodiak Island Borough Since 1980



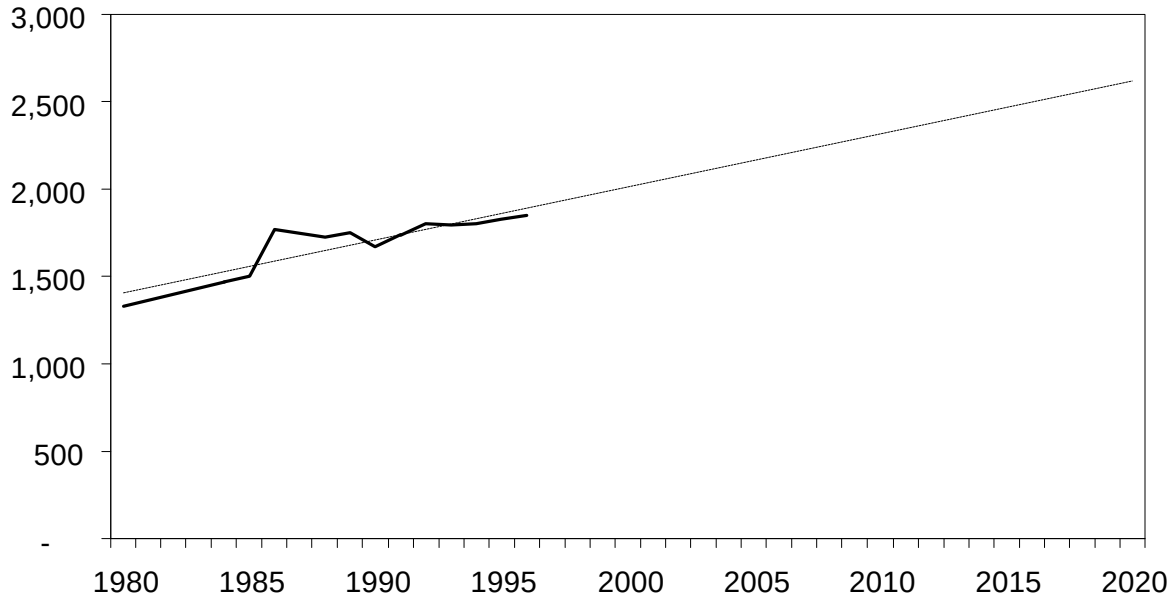
Lake and Peninsula Borough

Since 1970, the combined population of the communities which currently compose the Lake and Peninsula Borough has increased at a relatively steady rate, from a low of 1,217 individuals in 1980 to a high of 1,809 individuals in 1996. The increase in regional population is partially attributable to the growth of the commercial fishing industry in the region and the presence of federal, state, and local government organizations. Between 1990 and 1996, the population of the communities of Chignik, Ivanof Bay, and Ugashik dropped by more than 20 percent, while the population of Chignik Lagoon, Igiugig, and Pilot Point all increased by more than 45 percent. Most of these population fluctuations are attributable to changes in the commercial fishing activity. However, in smaller communities, extreme changes in population can also result from construction activity, seasonal commercial fishing activity, or other temporary projects in or near the community. Future reductions in borough population are possible as a result of declining federal and state government expenditures in the region and enhanced international competition in the global salmon market. Table 3.7 shows the population of select communities within the Lake and Peninsula Borough since 1970. The historical population of the borough (prior to its formation in 1989) was estimated by adding the population of the communities that currently compose the borough in 1970 and 1980. The graph that follows, as Exhibit 3.6, shows the change in population in the communities since 1980 and the projected change (using a linear trendline) through 2020. Appendix A contains similar graphs for each of the individual communities in the borough.

Table 3.7
Population of Selected Communities in the Lake and Peninsula Borough – 1970-1996

Community	1970	1980	1990	1996
Chignik	83	178	188	128
Chignik Lagoon	0	48	53	80
Chignik Lake	117	138	133	152
Egegik	148	75	122	139
Igiugig	36	33	33	48
Iliamna	58	94	94	103
Ivanof Bay	48	40	35	28
Kokhanok	88	83	152	166
Levelock	74	79	105	111
Newhalen	88	87	160	175
Nondalton	184	173	178	237
Pedro Bay	65	33	42	45
Perryville	94	111	108	101
Pilot Point	68	66	53	80
Port Alsworth	0	0	55	64
Port Heiden	66	92	119	147
Ugashik	0	0	7	5
Specified Communities Total	1,217	1,330	1,637	1,809
Actual Borough/Census Area			1,668	1,808
Census Area/Borough as Currently Configured (Estimated)	1,217	1,330	1,637	1,809

Exhibit 3.6
Population in the Lake and Peninsula Borough Since 1980



3.3 ECONOMY

Regional Overview

Economic activity throughout the Southwest Alaska region is dominated by the commercial fishing industry and government employment and supported by service industries and tourism. Most residents of the region are concentrated in regional population centers including Dillingham, the city of Kodiak, Naknek, and Unalaska. Military communities were once spread throughout the region. However, the recent closings of Adak Station, Eareckson Air Force Base (AFB), and King Salmon AFB have reduced the military presence in the region.

The largest employer in the region was the commercial fishing/seafood processing industry accounting for around 43 percent of all employment in 1996. This figure only partially reflects the large number of non-permanent workers seasonally employed during peak commercial fishing periods. Service and support industries (including transportation, communications, and utilities (TCU), wholesale and retail trade, and finance, insurance, and real estate (FIRE), and other service industries) employed the second most workers in Southwest Alaska in 1996. Combined employment in these industries in 1996 accounted for approximately 34 percent of total regional employment. Government was the next largest employer in the region in 1996, with approximately 20 percent of the total workforce. Of government workers, a significant number were employed in local government organizations including borough and city administration. Regional employment in construction is limited and affected by seasonal construction schedules. Mining activity in the region is currently negligible although exploration continues. The remainder of this regional overview section will summarize the region's primary economic activities, historical trends in regional employment, the effect of the Community Development Quota Program on the region, and seasonal employment variations. Subsequent sections will highlight economic activity in individual subareas. Population, employment, and demographic data used in the following sections were obtained from the State of Alaska Department of Labor, Research and Analysis Section (ADOL) and the State of Alaska Department of Community and Regional Affairs (DCRA). Unless otherwise stated, employment data represent wage and salary employment, and do not include self-employed persons. This is particularly relevant to fisheries employment, in which the vast majority of vessel skippers and crew members are treated as "self-employed".

PRIVATE SECTOR BASIC INDUSTRIES

Fisheries (Seafood Processing/Manufacturing)

The commercial fishing industry is a significant component of the Southwest Alaska economy. Activity in the region is concentrated in Unalaska, Bristol Bay (including Dillingham and Naknek), and Kodiak. However, additional fishing and seafood processing activity takes place throughout the region including the smaller communities of the Aleutians East Borough and the Lake and Peninsula Borough.

The economy of the Aleutians West Census Area (AWCA), including the communities of Unalaska, Atka, Nikolski, St. George, and St. Paul is primarily driven by the deepwater crab and bottomfish fisheries of the Bering Sea. According to ADOL, about 90 percent of the local workforce in Unalaska considers itself economically dependent on the fishing industry. Although salmon harvesting once dominated the economy of the Aleutians East Borough, it has been challenged by crab, herring, halibut, and sablefish over the past several years. The Aleutians East Borough manager emphasized that "when the salmon runs failed in 1996 in the Borough, it was hardly noticed except by the salmon fishermen" (Robert S. Juettner, February

17, 1998, personal communication). In 1996, 1,253, or 73 percent of all working individuals in the AEB were employed in manufacturing (seafood processing). The Bristol Bay sockeye (red) salmon fishery drives the economy of the Bristol Bay Borough and Dillingham Census Area, and is the largest salmon fishery in the world. Although average annual manufacturing employment in the Borough has fluctuated somewhat over the last decade, nearly all of the change occurred during the summer harvest months. Most commercial fishing activity in the Lake and Peninsula Borough is associated with salmon, although herring and halibut harvesting also takes place from the borough. A recent development (1997) is the establishment by the Alaska Board of Fisheries of a new cod fishery within a three-mile limit of the shore, exclusively for small boats. Total manufacturing employment in the Lake and Peninsula Borough has declined as a result of the departure of a processor and the reduction of cod harvesting activities. Kodiak is regularly ranked as one the nation's top seafood ports. Not surprisingly, the seafood industry is the driving force behind Kodiak's economy. The harvesting of salmon and groundfish dominate Kodiak's seafood production, although herring, shellfish, and halibut harvesting also take place.

The future of the commercial fishing industry will depend on the availability of resources for harvest and the commercial viability of the fisheries, as well as the region's ability to better market fish products and develop value-added and secondary processing capacity. A glut of salmon on the international market and the emergence of significant foreign farm fishing activities have threatened the future health of the Alaskan salmon industry. The disappointing Bristol Bay sockeye salmon run in 1997 has provided a further challenge to the industry. The Community Development Quota (CDQ) program has provided some rural Alaskan communities with an unique opportunity to participate in the deep water fisheries of the Bering Sea.

Information on the number of persons employed in the fish harvesting and in the at-sea fish processing industries is difficult to obtain because participants are typically paid a share of gross revenues, rather than on a wage or salary basis. The Alaska Department of Labor regularly collects data reporting wage and salary employment only. Therefore, ADOL data typically underestimate actual employment in fish harvesting and at-sea fish processing. Employees in shore-based processing facilities are paid on an hourly basis and therefore are more accurately represented in ADOL data.

An examination of fish harvesting data can provide benchmark information about fish harvesting employment in the Communities Boroughs and Census Areas of Southwest Alaska. The data in Tables 3.8 and 3.9 show the number of unique persons who owned and utilized commercial fishing permits by Borough or Census Area and by individual community in the Southwest Region[1]. These numbers represent the minimum of the number of residents involved in the fish harvesting industry, because most crew members are not permit holders themselves. Because of the diversity of the fisheries and the confidential nature of fishery data, it is difficult to make accurate estimates of the number or residency of crew members. However, it is not unreasonable to assume that for every permit holder who fished in a community, there is at least one additional person who served as a crew member. Employment by residents on at-sea processing vessels is likely to increase the numbers further. Reliable employment data by community on offshore vessels may become available as federal fishery managers analyze inshore-offshore allocations of pollock in the Bering Sea over the next several months.

[1] The numbers in Tables 3.10 and 3.11 show an almost universal decline in the number of unique fishing permit holders from 1990 to 1995. There are many possible explanations for this, ranging from poor data to migration of permits to the implementation of Individual Fishing Quota (IGQ) management in the halibut fishery. It is also possible that the two years are anomalies. A complete analysis of trends in the fish harvesting industry could shed light on these issues, but this is beyond the scope of the current analysis.

Table 3.8
Number of Residents Who Owned and Utilized Commercial Fishing Permits by Borough or Census Area

Borough or Census Area	1990	1995
Aleutians East Borough	240	229
Aleutians West Census Area	101	89
Bristol Bay Borough	206	195
Dillingham Census Area	754	654
Kodiak Island Borough	899	607
Lake and Peninsula Borough	245	214
Southwest Region Total	**2,445**	**1,988**

Source: Commercial Fishing Catch Data Aggregated by Alaska Census Division and City, Commercial Fishing Entry Commission, 1990, 1995.

Table 3.9
Number of Residents Who Owned and Utilized Commercial Fishing Permits by Community

Borough or Census Area	Community	1990	1995
Aleutians East Borough	Akutan	10	6
	Cold Bay	4	2
	False Pass	9	10
	King Cove	73	70
	Nelson Lagoon	26	26
	Port Moller	2	1
	Sand Point	116	114
Aleutians West Census Area	Atka	10	8
	Dutch Harbor	33	18
	St. George Island	16	10
	St. Paul Island	17	21
	Unalaska	25	33
Bristol Bay Borough	King Salmon	32	33
	Naknek	128	124
	South Naknek	46	38
Dillingham Census Area	Aleknagik	36	31
	Clarks Point	27	19
	Dillingham	297	251
	Ekuk	2	1
	Ekwok	7	4
	Koliganek	19	15
	Manokotak	104	94
	New Stuyahok	43	29
	Portage Creek	2	0
	Togiak	208	203
	Twin Hills	13	8

Table 3.9 (cont.)

Borough or Census Area	Community	1990	1995
Kodiak Island Borough	Akhiok	1	3
	Alitak	1	0
	Chiniak	5	3
	Karluk	1	0
	Kodiak	788	523
	Larsen Bay	10	12
	Moser Bay	2	0
	Old Harbor	32	29
	Ouzinkie	26	22
	Port Bailey	1	0
	Port Lions	31	16
	Port Williams	1	0
	Uganik Bay	1	0
Lake and Peninsula Borough	Chignik	17	11
	Chignik Bay	0	3
	Chignik Lagoon	17	19
	Chignik Lake	8	10
	Egegik	51	44
	Igiugig	5	5
	Iliamna	34	21
	Ivanof Bay	2	2
	Kokhanok	10	9
	Levelock	15	14
	Newhalen	2	2
	Nondalton	14	15
	Pedro Bay	6	5
	Perryville	7	8
	Pilot Point	27	23
	Port Alsworth	5	2
	Port Heiden	22	20
	Ugashik	3	1

Source: Commercial Fishing Catch Data Aggregated by Alaska Census Division and City, Commercial Fishing Entry Commission, 1990, 1995.

Construction

Construction activity is often not reported on a borough or census area basis due to the small number of individuals employed in the sector. Construction activity is typically strong during summer months and declines during the winter. In 1996, an average of 291 construction jobs were reported in the region.

Mining

Data on mining-related employment in Southwest Alaska was unavailable, which would appear to indicate that very little (or no) mining activity is taking place in the region. Hard rock mineral

and petroleum exploration continues to take place in the region.[2] The discovery of commercially viable hard rock mineral or oil/gas deposits could lead to eventual mining related activity in the region.

Subsistence

Native groups in Southwest Alaska include Aleuts, Athabascans, Allutiiq Eskimos, and Yup'ik Eskimos. Members of these native groups have engaged in subsistence activities for thousands of years. Typical subsistence harvests include salmon, cod, halibut, pollock, flounder, sea urchins, mussels, crab, shrimp, sea lion, seals, reindeer, ducks, seabird eggs, berries, and wood. Subsistence activities should remain an integral part of lifestyles in Southwest Alaska so long as resources are available for harvest.

Private Sector Support Industries

Service and support sector employment (including TCU, FIRE, wholesale and retail trade, and services including tourism) totaled 5,445 in 1996, or approximately 34 percent of all employment in Southwest Alaska. Since 1990, total reported service and support sector employment has fluctuated from a low of 4,823 in 1990 to a high of 5,748 in 1996. Many of the job opportunities in the sector are concentrated in the major population centers, including Dillingham, Kodiak, Naknek, and Unalaska. Historically, total employment in these industries has followed changes in commercial fishing activities and government employment. Future opportunities for employment in these sectors are expected to remain closely tied to fishing and government activity in the region, except for tourism, which is becoming an increasingly important component of the service economy.

GOVERNMENT

In 1996, total reported public sector employment (including civilian military jobs, but excluding uniformed military jobs) in Southwest Alaska was 3,164, or approximately 20 percent of the total jobs in Southwest Alaska. Table 3.10 Military Populations in Southwest Alaska, provides detail regarding the number of uniformed personnel and their dependents by borough, or census area, as appropriate. The figures in the table include the U.S. Army, Air Force, Navy, and Coast Guard, and the count is effective for July 1 of the year referenced. A significant portion of total public sector employment in the region is associated with local government including the administration of city and borough organizations. Since 1990, total government employment as a percentage of total regional employment has fluctuated from a high of 25 percent in 1991 and 1992 to a low of 20 percent in 1996. Total federal employment in the region has dropped significantly since the closures of Eareckson AFB, King Salmon AFB, and Adak Naval Air Station. Further reductions in federal and state government employment are expected as a result of the declining transfer of state and federal funds to communities throughout Southwestern Alaska.

[2] While no mining jobs appear in the employment data used for this repot, there is at least one indication that some mining is being done in Southwest Alaska. Between 1990 and 1995, 467 tons of non-ferrous ores were shipped out of Kodiak.

Table 3.10
Military Population of Southwest Alaska

Area	1990	1991	1992	1993	1994	1995	1996
South West Study Area Total Military Pop.	**6,910**	**7,029**	**7,545**	**6,776**	**3,482**	**3,432**	**2,966**
Uniformed Personnel	***3,732***	***3,814***	***3,840***	***3,485***	***1,933***	***1,888***	***1,491***
Dependents	***3,178***	***3,215***	***3,705***	***3,291***	***1,549***	***1,544***	***1,475***
Aleutians East Borough Total Military Pop.	-	-	-	-	-	-	-
Uniformed Personnel	-	-	-	-	-	-	-
Dependents	-	-	-	-	-	-	-
Aleutians West C.A. Total Military Pop.	4,190	4,551	4,721	3,961	902	860	587
Uniformed Personnel	*2,534*	*2,733*	*2,541*	*2,169*	*896*	*860*	*587*
Dependents	*1,656*	*1,818*	*2,180*	*1,792*	*6*	-	-
Bristol Bay Borough Total Military Pop.	285	261	281	299	-	-	-
Uniformed Personnel	*285*	*261*	*281*	*299*	-	-	-
Dependents	-	-	-	-	-	-	-
Dillingham C.A. Total Military Pop.	-	-	-	-	-	-	-
Uniformed Personnel	-	-	-	-	-	-	-
Dependents	-	-	-	-	-	-	-
Kodiak Island Borough Total Military Pop.	2,435	2,217	2,543	2,516	2,580	2,572	2,379
Uniformed Personnel	*913*	*820*	*1,018*	*1,017*	*1,037*	*1,028*	*904*
Dependents	*1,522*	*1,397*	*1,525*	*1,499*	*1,543*	*1,544*	*1,475*
Lake & Peninsula Borough Total Military Pop.	-	-	-	-	-	-	-
Uniformed Personnel	-	-	-	-	-	-	-
Dependents	-	-	-	-	-	-	-

SUMMARY OF REGIONAL ECONOMIC CHANGE

Total employment in Southwest Alaska has risen from 14,414 in 1990 to 16,080 in 1996, with a high of 16,255 in 1993. Services, commercial fishing and government employment accounts for most of the region's economic activity. Fluctuations in commercial fishing harvests and government expenditures will be felt throughout the region. Employment in service and support industries will continue to closely follow fishing activity and government expenditures in the region. Table 3.11 shows borough/census area specific employment since 1986. Because the Aleutians East Borough, Aleutians West Census Area, Lake and Peninsula Borough, and Dillingham Census Area (as currently composed) were not formed until the late 1980s, employment data were not provided for the years preceding their formation. Table 3.12 shows 1990 Census-reported industry-specific employment for the communities composing the boroughs/census areas of Southwest Alaska.

Table 3.11
Borough/Census Area Wage and Salary Employment – 1986-1996

Borough/Census Area	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Aleutians East Borough	*	*	1,022	1,281	1,426	1,672	1,843	1,511	1,554	1,699	1,724
Aleutians West Census Area	*	*	3,251	3,339	3,869	4,740	4,982	5,636	4,626	4,455	4,356
Bristol Bay Borough	1,167	934	1,041	1,289	1,071	1,073	1,134	1,082	1,140	1,145	1,016
Dillingham Census Area	*	*	*	*	1,789	1,944	2,024	2,079	2,113	2,055	2,064
Kodiak Island Borough	4,981	4,734	4,835	5,685	5,742	5,691	5,318	5,320	5,811	6,090	6,308
Lake and Peninsula Borough	*	*	*	*	517	530	551	627	625	620	612
Total					14,414	15,650	15,852	16,255	15,869	16,064	16,080

** Prior to Borough/Census Area (as currently composed) formation.*
Note: The data in this table consist of wage and salary employment; as such, they include proprietary earnings (e.g., independent fish harvest earnings).

Table 3.12
1990 Census-Reported Industry-Specific Employment

Community	Forestry/ Fishing/ Farming	Mining	Construction	Manufacturing	TCU*	Trade	FIRE**	Services	Education Services	Public Administration
Adak	10	2	96	4	75	209	15	149	130	211
Akhiok	2	5	0	0	0	0	0	0	6	13
Akutan	15	0	5	378	55	16	0	12	19	25
Aleknagik	2	0	3	0	6	7	3	3	17	7
Atka	3	0	0	0	2	5	0	6	3	7
Chignik	25	0	5	0	2	4	0	5	10	14
Chignik Lagoon	2	0	0	0	0	0	0	2	1	3
Chignik Lake	0	0	5	0	0	0	0	0	23	0
Chiniak	5	2	11	0	0	4	0	2	13	0
Clarks Point	0	0	3	2	0	0	0	0	14	3
Cold Bay	3	0	0	0	19	11	0	10	12	40
Dillingham	25	0	25	29	129	118	18	269	127	96
Egegik	4	0	0	2	7	6	0	0	4	5
Ekuk	0	0	0	0	0	0	0	0	0	0
Ekwok	0	0	2	0	2	0	0	0	4	5
False Pass	9	0	3	0	5	0	0	0	3	3
Igiugig	0	0	0	0	2	0	0	3	3	0
Iliamna	0	0	7	0	4	0	0	4	2	5
Ivanof Bay	0	0	0	0	0	0	0	0	13	0
Karluk	0	0	2	0	14	0	0	2	7	5
King Cove	35	0	16	119	4	65	3	16	7	11
King Salmon	6	3	14	6	56	17	2	8	28	91
Kodiak	546	3	202	644	267	625	73	578	269	282
Kokhanok	0	0	0	0	7	0	0	8	21	0
Koliganek	0	0	0	0	5	2	0	5	14	6
Larsen Bay	0	0	2	1	8	6	0	6	8	4
Levelok	0	0	0	0	7	0	0	12	9	6
Manokotak	3	0	0	0	12	2	3	7	50	22
Naknek	11	0	13	13	30	44	3	30	78	21
Nelson Lagoon	5	0	0	0	0	9	0	0	0	0
New Stuyahok	5	0	0	0	6	5	0	4	36	9
Newhalen	0	0	2	0	0	0	0	18	16	14
Nikolski	0	0	3	0	5	0	0	3	3	0
Nondalton	0	0	5	2	2	3	0	3	22	2
Old Harbor	2	0	0	0	8	13	0	8	5	6
Ouzinkie	5	2	0	2	6	2	4	14	14	23
Pedro Bay	0	0	0	0	0	0	0	6	7	2
Perryville	0	0	1	0	3	0	0	2	10	3
Pilot Point	2	0	0	0	5	1	0	0	6	3
Port Alsworth	0	0	0	0	3	0	0	3	6	5
Port Heiden	0	0	0	0	7	1	0	2	18	4
Port Lions	2	0	6	5	18	7	5	7	13	22
Portage Creek	0	0	0	0	0	0	0	0	0	0
Sand Point	76	0	15	184	26	40	5	26	52	14
St. George	0	0	10	0	2	4	0	9	10	5
St. Paul	44	0	32	71	27	18	61	34	28	41
South Naknek	0	0	7	0	0	7	0	4	15	2
Togiak	0	0	2	2	12	14	0	11	42	17
Twin Hills	0	0	0	0	5	0	0	0	4	0
Ugashik	0	0	0	0	0	0	0	1	0	0
Unalaska	147	0	228	735	463	522	18	162	70	137
Womens Bay	65	0	25	6	24	36	0	53	39	17

** Transportation, communications, and utilities. ** Finance, insurance, and real estate.*

Note: Numbers in communities will not necessarily sum to the totals shown in the Table 3.12, due to missing or unavailable information.. The ADOL does not include independent fish harvesters in their employment estimates. However, data on independent fish harvesters are provided separately for the years 1990 and 1995 (years for which data are available) in Tables 3.10 and 3.11.

COMMUNITY DEVELOPMENT QUOTA (CDQ) PROGRAM IMPACTS

The importance of the fishing industry to the economy of Southwest Alaska cannot be over-emphasized. In general, notwithstanding reports in the popular press, fishery scientists charged with estimating the health of the resources indicate that groundfish stocks in the Bering Sea and Southwest Alaska appear to be stable or perhaps declining slightly. Halibut harvests are expected to increase significantly over the next several years, eventually falling back down to current levels. Crab stocks are more uncertain, but should remain at levels consistent with the last few years. Salmon harvests are perhaps even more uncertain, given the dramatic shortfall of expected returns to Bristol Bay in 1997, and the still unanswered questions as to why the shortfall occurred.

Because of the stability in groundfish fisheries and the growth in the halibut fishery, it is reasonable to assume that both Kodiak and Unalaska will remain the premier fishing ports in the U.S. well into the future, even with potential declines in the salmon fisheries. It is also reasonable to expect that there will be growth in the fishing economies of many of the smaller communities in the region, particularly in the Bristol Bay area, the Pribilof Islands, and the Aleutian Islands. This growth is largely due to the Community Development Quota (CDQ) Programs, which began in 1992 and are expanding through the year 2000. By the year 2000, fully 7.5 percent of the overall groundfish and Crab harvests in the Bering Sea and Aleutian Islands will be allocated to coastal villages throughout the region. Changes in the Federal Fisheries Law, embodied in the Magnuson-Stevens Fishery Conservation and Management Act, make the CDQ programs a permanent fixture in the Bering Sea and Aleutian Islands fisheries under federal jurisdiction.

The following 20 communities in Southwest Alaska currently participate in the CDQ program:

- Akutan
- Aleknagik
- Atka
- Clarks Point
- Dillingham
- Egegik
- Ekuk
- False Pass
- King Salmon/Savonoski
- Manokotak
- Naknek
- Nelson Lagoon
- Nikolski
- Pilot Point
- Port Heiden
- South Naknek
- St. George
- Togiak
- Twin Hills
- Ugashik

Together, these communities will be allocated three percent of the Bering Sea Pollock Quota or 32.3 million pounds. In addition these communities will receive roughly 3.5 percent of the combined annual catch quotas of crab, halibut and all other groundfish. The CDQ apportionments in Southwest Alaska are expected to generate direct royalty payments to the communities on the order of $10 million per year. With this income and through arrangements with industry partners, the CDQ communities are developing a variety of fishing related infrastructures, including a new processing plant and dock in Atka, a new dock in Nelson Lagoon, and harbor improvements in St. George and St. Paul.[3] In the future, the continued development and participation in the groundfish, halibut, and crab fisheries by the CDQ communities will likely lead to increased economic improvements in other sectors. With increasing economic activity, it is likely that the demands placed on the existing transportation infrastructure will be greater than they have been in the past.

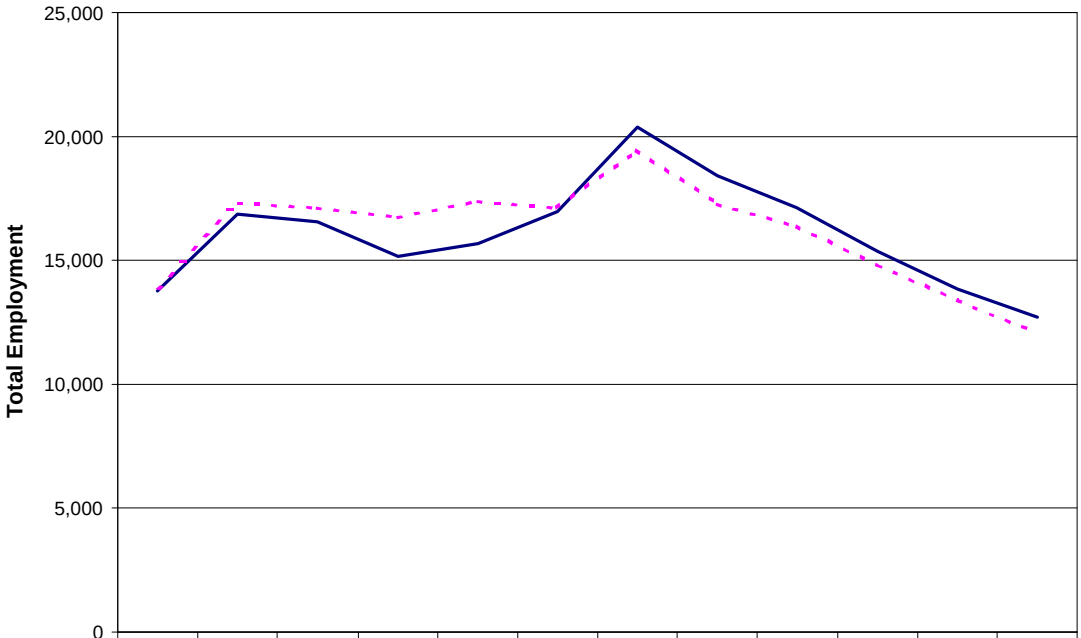
[3] More thorough descriptions of the CDQ program are available through the Alaska Department of Community and Regional Affairs, the Alaska Regional Office of the National Marine Fisheries Service, and the North Pacific Fishery Management Council. In addition, the National Research Council's Ocean Studies Board is conducting a comprehensive study of the social and economic impacts of the CDQ program. That study should be available in the spring of 1998.

SEASONAL EMPLOYMENT FLUCTUATIONS

Southwest Alaska is heavily affected by seasonal fluctuations in economic activity and employment. As in the rest of Alaska, most of the economic activity in Southwest Alaska occurs during the summer months. For instance, the annual sockeye salmon runs near Bristol Bay attract thousands of fishers and workers to the region during summer months. Additionally, sport fishing visitors and construction activity peak in the summer. In 1996, employment in the region totaled 5,500 more jobs during July than during January.

Strong economic activity prevails throughout the region during the summer. However, a number of other seasonal fluctuations in economic activity take place in Southwest Alaska. For instance, the primary seasons for crab and groundfish occur in the winter and fall. The harvesting and processing jobs that these fisheries create are seen primarily in Unalaska and Kodiak, but also in Akutan, Chignik, King Cove, Sand Point, St. Paul, and St. George. By and large, these jobs are filled with residents from outside of Alaska with the exception of Kodiak where a greater percentage of fish processing and harvesting workers are state residents. Exhibit 3.7 shows the total employment in Southwest Alaska by month in 1995 and 1996.

Exhibit 3.7
Southwest Alaska Employment by Month – 1995-1996



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1995	13,764	16,831	16,553	15,150	15,681	16,952	20,375	18,436	17,143	15,363	13,819	12,709
1996	13,879	17,304	17,129	16,733	17,404	17,118	19,433	17,271	16,383	14,807	13,418	12,075

PER CAPITA INCOME

The per capita measure of personal income is calculated by dividing the total personal income of the residents of an area by the population of the area. Per capita personal income (PCPI) includes wages, salaries, other labor income, proprietor's income, dividends, interest, rent, and transfer payments received by borough/census area residents. Per capita income is often used as a measure of the relative well being of an area. In general per capita income in Southwest Alaska may appear high relative to the average per capita income in Alaska or in

the U.S. as a whole. For instance, the reported per capita income for the Bristol Bay Borough in 1995 was $35,369, one of the highest levels in the nation. There are, however, several important caveats (such as the sources of PCPI information and cost of living in the region) to bear in mind, particularly as they apply to Southwest Alaska.

The primary source of income information used in developing PCPI around the country are the wages reported to the U.S. Department of Labor through the state divisions. The majority of income in Southwest Alaska is non-wage income derived from fishing. Unlike wage or salary income, fishing income (or employment for that matter) is not reported to the State on a regular basis. Fishing income estimates, including both owner and crew income, are based on Federal Income Tax returns and recent Census data. According to industry sources, commercial fishers are notorious over-reporters of income in the Census, often reporting gross income rather than income after costs. Similarly, crew members are notorious under-reporters when it comes to income taxes. The combination of the two reduces the reliability of the personal income estimate for the region.

Perhaps the most important consideration for Southwest Alaska is the cost of living, which is quite high relative to other parts of Alaska (particularly the more populated areas on the road system including Anchorage and Fairbanks). For example according the June 1997 issue of *Alaska Economic Trends*, the cost of one week's food in Dillingham was 164 percent of the cost of food in Anchorage. The cost of food in Kodiak was 125 percent of the cost of food in Anchorage, while the cost of food in St. George was reported at 215 percent of Anchorage costs. The June 1997 issue of *Alaska Economic Trends* reported that the cost of food in Anchorage was roughly 97 percent of the average cost of food in the U.S. in recent years.

Finally, it is important to note that the closures of King Salmon Air Force Base (AFB), Eareckson Air Force Base, and Adak Naval Air Facility (NAF) during the 1990s have significantly affected the Southwest Alaska economy. For instance, it is assumed that all military personnel stationed at the three installations were employed. Some of these military personnel moved to the bases with their families. However, due to the remoteness of the region, many family members would elect to live in more populated areas while their relative in the military was deployed at King Salmon AFB, Eareckson AFB, or Adak NAF. The departure of the military reduced the number of jobs in the region. Keeping in mind that PCPI is measured by total personal income divided by the number of residents, the reduction in the number of jobs (particularly jobs of military personnel who might be stationed at remote locations without family members) results in a subsequent reduction of the regional PCPI.

Table 3.13 shows the PCPI of the six census areas/boroughs composing the Southwest Alaska study area and also shows the weighted PCPI of the Southwest Alaska study area between 1993 and 1995.

As shown in the data, there was a great disparity in the per capita personal income of residents of Southwest Alaska between 1993 and 1995. For instance, in 1995, the Bristol Bay Borough had the highest per capita personal income of any borough/census area in the state. The borough's 1995 PCPI was $11,323 higher than the state PCPI and $12,173 higher than the national PCPI. The high personal income in the borough is primarily attributable to the military employment at King Salmon AFB and the relatively high income generated as a result of participation in the Bristol Bay sockeye salmon fishery. The closure of King Salmon AFB in 1994 will probably result in reduced PCPI for future years. In the same year, the Lake and Peninsula Borough, which is adjacent to the Bristol Bay Borough, had the fifth lowest PCPI in the state.

Table 3.13
Per Capita Personal Income (PCPI) 1993-1995

Area Name	1993	1994	1995	1995
United States	$ 21,223	$ 22,044	$ 23,196	
Alaska	$ 22,807	$ 23,495	$ 24,046	
Aleutians East Borough	$ 18,784	$ 20,234	$ 21,477	15
Aleutians West Census Area	$ 20,925	$ 26,898	$ 29,313	3
Bristol Bay Borough	$ 29,827	$ 32,492	$ 35,369	1
Dillingham Census Area	$ 21,598	$ 21,334	$ 22,701	12
Kodiak Island Borough	$ 20,025	$ 19,545	$ 20,680	17
Lake and Peninsula Borough	$ 15,934	$ 15,665	$ 17,051	23
Weighted PCPI, Southwest Alaska, 1993-1995	$ 20,627	$ 21,578	$ 23,099	

Source: U.S. Department of Commerce, Bureau of Economic Analysis Web Page: http://www.bea.doc.gov/remd2/svy_ak.htm
Note: The U.S. Department of Commerce attempts to include all earnings, including proprietary earnings, in its per capita income estimates.

The Lake and Peninsula Borough's PCPI was almost $7,000 less than the state PCPI and $6,145 less than the national PCPI. The low PCPI in the Lake and Peninsula Borough is a partial reflection of the subsistence lifestyles practiced by many borough residents. The weighted PCPI of the Southwest Alaska boroughs/census areas was between 90 percent and 96 percent of the state PCPI and between 97 percent and 100 percent of the national PCPI in 1993-1995.

Among the remaining boroughs and census areas in the region, only the Aleutians West Census Area had a PCPI above the state and national level. The 1995 PCPI of the Aleutians West Census Area was reported at $29,313. This is over $5,000 higher than the state PCPI and $6,000 higher than the national PCPI. The closures of Eareckson AFB and Adak NAF have since resulted in a significant drop in total military employment in the region and will lead to reduced PCPI in the census area in future years. The 1995 PCPI of the Aleutians East Borough, Dillingham Census Area, and Kodiak Island Borough are all lower than both the state and national PCPI.

The PCPI in the Southwest Alaska study area grew steadily between 1993 and 1995. The weighted PCPI of the boroughs and census areas which compose the region fluctuated from $20,627 in 1993 to $23,099 in 1995. Boroughs and census areas experiencing significant PCPI growth included the Bristol Bay Borough, where PCPI grew from $28,827 in 1993 to $35,369 in 1995, and the Aleutians West Census Area, where PCPI grew from $20,925 in 1993 to $29,313 in 1995. Growth in earnings from the Bristol Bay sockeye salmon industry accounted for some of the PCPI augmentation in the Bristol Bay Borough. Increased earnings from participation in the deep sea fisheries of the Bering Sea partially account for the growth in PCPI in the Aleutians West Census Area. However, the total PCPI for the region has probably dropped since the last reported year due to the closures of the Eareckson AFB, King Salmon AFB, and Adak NAF.

ECONOMIC ACTIVITY BY COMMUNITY PLANNING AREA

Aleutians East Borough

The Aleutians East Borough, formed in 1987, includes the communities of Akutan, Cold Bay, False Pass, King Cove, Nelson Lagoon, and Sand Point. The Aleutians East Borough economy was built around the commercial fishing industry and is supported by government employment activity. Harvesting and processing of fisheries products, including crab, herring, cod, halibut, salmon, and sablefish are the community's economic mainstay. In 1996, 1,253, or 73 percent of all working individuals in the borough were employed in manufacturing (seafood processing). Of the 294 individuals working for government, 257 were employed with local government. Other significant industries include services with 63 employed individuals and wholesale and retail trade with 52 employed individuals. The regional airport at Cold Bay, built during World War II, has the third longest runway in the state and is the mainstay of economic activity in that city. Subsistence activities are also prevalent throughout the borough.

PRIVATE SECTOR BASIC INDUSTRIES

Fisheries (Seafood Processing/Manufacturing)

Commercial fishing activity is the engine behind the economy of the Aleutians East Borough. The harvesting of salmon dominates fisheries activity in the Aleutians East Borough, however, harvesting of herring, cod, halibut, and sablefish also takes place. In 1996, 1,253, or 73 percent of all working individuals in the borough were employed in manufacturing (seafood processing). In years in which data are available for the borough (1988-1996), the percentage of the total workforce working in the seafood industry has not fallen below 61 percent. Economic development initiatives in the region (including marine infrastructure projects) are expected to continue to focus on the commercial fishing industry. The city of Cold Bay is looking to integrate utilization of its airport with the surrounding commercial fishing activity.

Construction

Data on construction-related employment in the borough were not available, indicating limited participation in the industry.

Mining

No data on mining-related employment were available for the borough.

Subsistence

So long as adequate resources are available, subsistence harvests should remain an integral part of traditional Aleut lifestyles practiced in the region. According to 1990 Census data, Aleuts and other Alaska Natives accounted for approximately 42 percent of the Aleutians East Borough's population.[4]

Private Sector Support Industries

The number of total individuals employed in services in the Aleutians East Borough has fluctuated significantly since 1988. However, these fluctuations may be the result of the misreporting of worker activity in the region rather than any pronounced economic

[4] The Aleutians East Borough manager notes that 1990 Census data may not be entirely reliable. "We generally discuss the 1990 Census cautiously. A review of the racial breakdown and the number of people living in group quarters should make the researcher skeptical of relying on these figures

phenomenon. Combined, employment in TCU, trade, FIRE, and services has fluctuated from a high of 15 percent of all employed borough residents in 1988 to a low of 8 percent of all employed borough residents in 1992. Activity in these sectors is expected to continue to closely follow changes in commercial fishing and government employment.

GOVERNMENT

In 1996, 294 individuals in the Aleutians East Borough were employed in government. Of all government employees, 257, or 87 percent were employed with local government organizations. Remaining government employment included 20 federal government employees (including those employed at the airport in Cold Bay) and 16 state government employees. Since 1988, government employment as a percentage of total employment in the borough has fluctuated from a low of 15 percent in 1992 to a high of 19 percent in 1993 and 1994. Government employment in the borough may fall as federal and state expenditures in the region decline.

SUMMARY OF PLANNING AREA ECONOMIC CHANGE

Since 1988, total employment in the borough has fluctuated from 1,022 in 1988 to 1,724 in 1996, with a high of 1,843 in 1992. In every year, economic activity has been dominated by the commercial fishing industry and supported by employment in government organizations. Future economic development activity, including infrastructure development, is expected to remain closely tied to the commercial fishing/seafood processing industries in the region. Reductions in total government employment in the borough are possible as federal and state expenditures in the region decline. Table 3.16 shows industry-specific employment in the borough between 1988 and 1996.

Table 3.14
Wage and Salary Employment by Industry – Aleutians East Borough – 1988-1996

Industry	1988	1989	1990	1991	1992	1993	1994	1995	1996
Mining	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	N/A
Construction	11	7	7	5	N/A	N/A	N/A	3	4
Manufacturing*	629	901	997	1,198	1,450	1,082	1,228	1,224	1,253
TCU**	60	53	85	84	33	28	25	25	27
Wholesale Trade	N/A	N/A	N/A	N/A	N/A	20	20	6	6
Retail Trade	46	54	59	58	65	59	51	46	46
FIRE***	33	19	19	19	41	58	73	30	29
Services	16	17	27	14	16	15	17	52	63
Agriculture, Forestry, Fishing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3	2
Federal Government	29	31	30	26	26	27	25	20	20
State Government	N/A	2	0	32	28	16	16	18	16
Local Government	182	178	195	214	224	240	256	272	257
Total Employment	1,022	1,281	1,426	1,672	1,843	1,511	1,554	1,699	1,724

** Includes seafood processing. ** Transportation, communications, and utilities. *** Finance, insurance, and real estate.*

Note: Shaded numbers are estimated. Total employment may not equal the sum of industry-specific numbers, since multiple data sources are represented.

The ADOL does not include independent fish harvesters in their employment estimates. However, data on independent fish harvesters are provided separately for the years 1990 and 1995 (years for which data are available) in Tables 3.10 and 3.11.

Aleutians West Census Area

With most of the Aleutians West Census Area population located in Unalaska, the majority of regional employment opportunities also occur in the city. In the July 1994 issue of *Alaska Economic Trends*, it was reported that half of the Unalaska labor force worked directly in the seafood sector. At the same time, 90 percent of workers in the community stated that they were economically dependent on the fishing industry. In addition to the economic activity created by shore-based fish processors in Unalaska, a great deal of economic activity is centered around supplying the fleet of offshore processing ships with fuel and services. The Pribilof communities of St. George and St. Paul have also initiated significant infrastructure developments targeted at attracting commercial fishing.

The largest employment sector in the census area in 1996 was manufacturing (i.e., seafood processing), with 2,247 jobs or 52 percent of the total workforce. Government was the next largest employer, with 628 employees or 14 percent of the total workforce. The third largest industry sector was services, with 590 employees or 14 percent of the total workforce. Nearly 80 percent of those employed in the service sector work in the engineering and management services industry. Transportation, communication, and utilities industries accounted for 7 percent of the total workforce and the wholesale and retail trade industries captured 10 percent of the total workforce.

PRIVATE SECTOR BASIC INDUSTRIES

Fisheries (Seafood Processing/Manufacturing)

The Aleutians West Census Area economy is primarily driven by the deepwater crab and bottomfish fisheries of the Bering Sea. According to ADOL, about 90 percent of the local workforce in Unalaska considers itself economically dependent on the fishing industry. Unalaska is regularly ranked among the nation's top seafood ports, in terms of both value and volume of fish landed. Relevant employment includes catching (fishing), processing, transporting seafood to market, or providing support services to fishers and processors. Since 1988, manufacturing (seafood processing) employment in the Census Area has risen from a low of 961 workers in 1988 to a high of 2,872 workers in 1993. In 1996, 2,247 people were employed in seafood processing. The increase in crab and bottomfish fishing activity in the North Pacific in the 1980s accounts for this dramatic swing in manufacturing employment over the last decade.

A severe housing shortage in Unalaska currently restricts the in-migration of potential resident workers in the community. Additionally, the deepwater fishing industry of the Bering Sea is experiencing over-capitalization, and employment in seafood processing has dropped by 625 workers since 1993. Nonetheless, the deepwater seafood business is expected to maintain its current level of productivity and to continue to support significant employment in seafood-processing-related activities.

Construction

Between 1988 and 1990, an average of 186 individuals were estimated to have been employed in construction industry in Unalaska. An average of 107 individuals were estimated to have been employed in construction between 1991 and 1996. The higher employment levels in the 1980s are a reflection of infrastructure developments associated with the growth of the Bering Sea crab and bottomfish industry over the last decade. Although total construction employment in Unalaska has dropped significantly since the 1980s, the severe

housing shortage which still exists in the community may provide an opportunity for future employment growth in the industry.

Mining

Data on mining-related employment in the Aleutians West Census Area were not available. This indicates that very little (or no) mining activity is taking place in the region.

Subsistence

Although Aleuts comprise a smaller percentage of Unalaska's population than Alaska Natives do in many other western Alaska communities, subsistence harvests remain an integral part of the traditional Aleut lifestyles that are practiced in the region. Typical subsistence harvests include salmon, cod, halibut, pollock, flounder, sea urchins, mussels, crab, shrimp, sea lion, seals, reindeer, ducks, and seabird eggs.

Private Sector Support Industries

Service-related support industry employment in TCU, FIRE, wholesale and retail trade, and services accounted for approximately 33 percent of the overall employment in Unalaska in 1996. Combined employment in these industries exceeded 1,400 individuals. Many of the job opportunities in this sector are concentrated in the city of Unalaska, the major hub of transportation and commerce for the western Aleutian Islands. The severe housing shortage which exists in Unalaska partially limits the potential for significant, permanent growth in the service sector in Unalaska. Future growth in the industry will depend heavily on the availability of housing in the region and the continued success of the Bering Sea deepwater fisheries.

GOVERNMENT

In 1996, public sector employment accounted for around 14 percent of the total jobs in the Aleutians West Census Area. Total federal employment in the Aleutians West Census Area has dropped from a high of 813 individuals in 1989 to a low of 135 individuals in 1996. This drop is a partial reflection of the loss in federal employment in the region preparatory to the 1997 closure of the Adak Naval Air Facility. Some reductions in local and state government employment are expected as a result of the declining transfer of state and federal funding to communities in the Aleutians West Census Area.

SUMMARY OF PLANNING AREA ECONOMIC CHANGE

Employment in the Aleutians West Census Area has fluctuated from 3,251 in 1988 to 4,356 in 1996, with a high of 5,636 in 1993. The crab and bottomfish fisheries of the Bering Sea are expected to account directly or indirectly for most of the employment in Unalaska for some time. The closure of Adak Naval Air Station has resulted in a reduction in the total number of federal jobs in the Aleutians West Census Area. However, the strength of the Bering Sea deep sea fisheries is expected to support employment opportunities for a number of years. Table 3.15 shows industry-specific employment in the census area between 1988 and 1996.

Table 3.15
Wage and Salary Employment by Industry – Aleutians West Census Area – 1988-1996

Industry	1988	1989	1990	1991	1992	1993	1994	1995	1996
Mining	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	0
Construction	279	133	145	93	139	150	129	78	51
Manufacturing*	961	1,185	1,422	2,027	2,114	2,872	2,323	2,212	2,247
TCU**	265	298	420	427	442	386	331	333	322
Wholesale Trade	11	18	N/A	87	118	39	60	44	45
Retail Trade	165	174	311	403	353	365	354	367	387
FIRE***	69	71	79	76	76	78	76	70	84
Services	225	152	143	297	444	476	389	647	590
Agriculture, Forestry, Fishing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0	2
Federal Government	796	813	732	792	771	692	442	205	135
State Government	81	80	84	40	48	46	38	37	31
Local Government	379	381	461	469	503	538	505	462	462
Total Employment	3,251	3,339	3,869	4,740	4,982	5,636	4,626	4,455	4,356

** Includes seafood processing. ** Transportation, communications, and utilities. *** Finance, insurance, and real estate.*

Note: Shaded numbers are estimated. Total employment may not equal the sum of industry-specific numbers, since multiple data sources are represented.

The ADOL does not include independent fish harvesters in their employment estimates. However, data on independent fish harvesters are provided separately for the years 1990 and 1995 (years for which data are available).

Bristol Bay Borough

In 1996, 378 residents (or one third of the borough work force) were reported to work for government, including federal, state, and local agencies. Of these, 298 were employed with the local government. Although local government is the single largest employer in the region, the salmon fishery is the economic engine behind the Bristol Bay Borough economy. ADOL reported that one fifth of the borough's total workforce, or 208 residents, were employed in the processing sector in 1996, and DCRA reported that 227 borough residents held commercial fishing permits. Other industries, such as services, retail, and transportation, are also indirectly dependent upon the salmon fishery. All of the communities within the borough are members of the Bristol Bay Economic Development Corporation (BBEDC), which manages the pollock, halibut, and sablefish harvest quota awarded under the CDQ program.

PRIVATE SECTOR BASIC INDUSTRIES

Fisheries (Seafood Processing/Manufacturing)

The Bristol Bay sockeye (red) salmon fishery is the engine behind the economy of the Bristol Bay Borough. The sockeye salmon fishery in Bristol Bay is the largest in the world, and the July, 1997 issue of *Alaska Economic Trends* reported that more than 95 percent of all salmon harvested in Bristol Bay is sockeye. Although average annual manufacturing employment (seafood processing) in the Borough has fluctuated somewhat over the last decade, nearly all of the change occurs during the summer months. Additionally, some Bristol Bay processors cap the number of individuals they employ each year, resulting in constant annual seafood-related employment levels. The region and the Borough are currently struggling with the impacts of the disappointing 1997 harvest. The lower harvest levels in 1997 may be cause for concern, but ADFG biologists have not concluded that the 1997 return in necessarily a harbinger of the future.

Regional participation in the deepwater fisheries of the Bering Sea by borough residents is currently limited. However, royalties received from the CDQ program are expected to enhance coastal fisher participation in pollock and other deepwater fisheries. Employment in these fisheries will likely continue to increase as coastal fisher involvement in deepwater fisheries grows.

Construction

Data on construction-related employment in the borough was not available, indicating limited participation in the industry. Most employment in construction takes place during summer and is closely related to the level of new construction development in the region.

Mining

No data on mining-related employment were available. This indicates that very limited (or no) mining activity is taking place in the region.

Subsistence

Subsistence harvests remain an integral part of traditional Yup'ik Eskimo, Aleut, and Athabascan lifestyles practiced in the region. According to DCRA, Alaska Natives accounted for approximately 32 percent of Naknek's population in 1996.

Private Sector Support Industries

Service-related support industry employment in TCU, FIRE, wholesale and retail trade, and services has fluctuated somewhat in the Bristol Bay Borough since 1986. In 1996 these were around 39 percent of all jobs reported in the census area. Most of the job opportunities in this

sector are concentrated in Naknek (the administrative center for the Bristol Bay Borough) and King Salmon. Employment in the sector is expected to remain relatively stable, with modest growth possible. These support industries will depend heavily on the continued strength of employment in other sectors, including seafood processing and government.

GOVERNMENT

Approximately 37 percent of the total employment in the borough is in the public sector. Around 298 percent of the 378 individuals employed in the public sector in 1996 worked in local government organizations. State government organizations accounted for approximately 8 percent of all public sector employees, while federal organizations accounted for around 13 percent of public sector employment. Excluding the closure of the King Salmon Air Force Base in 1994 (resulting in a loss of approximately 75 federal positions), government employment in the region has remained relatively stable since 1986. A slight decline in total public sector employment in the region is possible in upcoming years, given the uncertainty of state and federal revenues.

SUMMARY OF PLANNING AREA ECONOMIC CHANGE

Over the last 10 years, total employment in the Bristol Bay Borough has risen from a low of 934 individuals in 1987 to a high of 1,289 individuals in 1989. Total employment in 1996 numbered 1,016. Future employment growth will remain heavily dependent on the total number of individuals employed in regional government organizations and the continued health of the seasonal sockeye salmon fishery. Table 3.16 shows industry-specific employment in the borough between 1986 and 1996.

Table 3.16
Wage and Salary Employment by Industry – Bristol Bay Borough – 1986-1996

Industry	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Mining	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Construction	N/A	N/A	10	N/A	N/A	N/A	N/A	N/A	N/A	24	35
Manufacturing*	504	272	296	448	365	371	345	251	306	361	208
TCU**	142	147	188	237	94	98	157	178	163	142	147
Wholesale Trade	9	N/A	N/A	N/A	8	N/A	N/A	7	N/A	12	13
Retail Trade	58	60	62	72	68	59	63	71	82	94	106
Trade	67	60	62	72	76	59	63	78	82	106	119
FIRE***	8	12	7	0	0	N/A	N/A	11	12	13	11
Services	44	36	44	40	46	67	81	74	107	117	119
Agriculture, Forestry, Fishing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1	2
Federal Government	71	80	88	92	87	88	99	110	85	51	50
State Government	37	34	38	45	40	30	28	31	30	30	30
Local Government	296	273	297	301	328	328	317	335	320	301	298
Total Employment	1,167	934	1,041	1,289	1,071	1,073	1,134	1,082	1,140	1,145	1,016

** Includes seafood processing. ** Transportation, communications, and utilities. *** Finance, insurance, and real estate.*

Note: Shaded numbers are estimated. Total employment may not equal the sum of industry-specific numbers, since multiple data sources are represented.

The ADOL does not include independent fish harvesters in their employment estimates. However, data on independent fish harvesters are provided separately for the years 1990 and 1995 (years for which data are available).

Dillingham Census Area

Dillingham is the regional center for the Bristol Bay region and is linked to the rest of Alaska through its airport. Surrounding communities rely on Dillingham for commerce, health care, and transportation. Dillingham is also a major hub for fishing and fish processing activity. During the fishing season the city's population can more than double to support fishing and processing industries. Employment in health, commerce, and government reduces the large seasonal employment fluctuations in the Dillingham economy that are typical in Southwest Alaska.

In 1996, nearly 80 percent of the inhabitants of the Dillingham Census Area worked in one of three industries: services, manufacturing, or government. The industry employing the most individuals was services, with 609 workers. Most employment in the service sector was in health services. The industry employing the next largest number of individuals was government, with 534 individuals or around 25 percent of the total workforce. State and federal government employed relatively few individuals in the region. However, local government employed 420 of the 534 individuals in the government sector (or approximately 80 percent of the total government workforce). The third largest employing industry in the region was manufacturing (or seafood processing), which accounted for approximately 432 workers. In addition to individuals employed in the processing sector, DCRA reported that 316 residents held commercial fishing permits. Dillingham is also the location of the Bristol Bay Economic Development Corporation (BBEDC), which manages the pollock, halibut, and sablefish harvest quota awarded under the CDQ program. The CDQ program has been successful in providing scholarships, vocational training, adult and general education programs, and technical grants. The program has also employed approximately 130 Bristol Bay residents in the pollock fishery and six residents in the halibut and sablefish fisheries.

PRIVATE SECTOR BASIC INDUSTRIES

Fisheries (Seafood Processing/Manufacturing)

Complete historical data on the number of individuals employed in the seafood industry in the Dillingham Census Area were not available. Available data indicated that 762 individuals were employed in seafood processing (manufacturing) in 1990 while 747 were employed in 1994. These relatively static employment levels are consistent with similar trends identified by ADOL. For instance, ADOL indicated that seafood processing employment was nearly the same in 1988 and 1995, even though the total salmon harvest in Bristol Bay was 73,000 tons less in 1988. The limited change in seafood processing employment, according to ADOL, is driven by processing companies, not harvests. For instance, when large harvests occur, the processing companies typically opt to work their employees longer hours, ship the seafood to other processing facilities in the state, or utilize floating processors rather than hire more workers. It is important to note that the identified employment levels are based on annual averages. Most of the employment in seafood processing takes place during the short summer harvest period. For instance, in July 1996, 1,395 individuals were employed in the manufacturing sector (seafood processing), and only 100 individuals were employed in the sector in December 1995.

Prior to the disappointing 1997 sockeye salmon run, the Bristol Bay fishery was relatively prosperous in the 1990s. According to ADOL, a record catch of more than 125,000 tons of salmon was harvested in Bristol Bay in 1995. The sockeye (red) salmon fishery in Bristol Bay is the largest in the world, and more than 95 percent of all salmon harvested in Bristol Bay is of

the sockeye species. Additionally, the waters around Togiak, which is located east of Dillingham, are home to the largest herring fishery in the state. In 1996 *Alaska Economic Trends* reported that more than 50 percent of all herring harvested in the state are from the waters around Togiak. Although regional participation in the Bering Sea is currently limited, royalties received from the CDQ program are expected to enhance coastal fisher participation in pollock and other deepwater fisheries.

Construction

Complete historical data on construction employment in the Dillingham Census Area were not available. In 1996, 43 individuals were employed in the construction industry. Most employment is seasonal, with the majority of construction activity taking place during summer.

Mining

Only three individuals were reported to be employed in the mining industry in the Dillingham Census Area in 1996. In previous years mining employment figures were not reported by ADOL, indicating limited participation in the industry.

Subsistence

Subsistence harvests remain an integral part of traditional Yup'ik Eskimo lifestyles practiced in the region. Typical subsistence harvests include moose, fish, birds and bird eggs, and berries. Subsistence activities are particularly important in rural economies where limited cash economies exist. While no statistics on the total subsistence harvests in the region are available, subsistence activities should remain strong in the region as long as Yup'ik and Aleut traditions are maintained and resources of the area are available for harvesting.

Private Sector Support Industries

Service-related industry employment in transportation, communications, and utilities (TCU), finance, insurance, and real estate (FIRE), wholesale and retail trade, and services has grown gradually in the Dillingham Census Area since 1990. Combined employment in these industries accounted for around 51 percent of all jobs reported in the census area in 1996. Many of the job opportunities in this sector are concentrated in the city of Dillingham, the regional hub of transportation and commerce. Most of this growth will continue to support employees of government organizations and fishing-related industries.

GOVERNMENT

The public sector is an important source of employment in the region. More than 25 percent of the total employment in the Dillingham Census Area is with government organizations, and the sector contributes the largest wage and salary payroll in the region. Around 80 percent of the 534 individuals employed in public sector in 1996 worked in local government organizations. In many of the rural communities in the region, the school, local government, and health clinic are primary sources of employment. State and federal government organizations each accounted for approximately 10 percent of the total public sector employment in the region in 1996. Public sector employment in the region has remained relatively stable since 1985. A modest annual decline in total public sector employment is possible in upcoming years. Most of this job loss is expected to take place in local government organizations as a result of reductions in state and federal funding to regional communities.

SUMMARY OF PLANNING AREA ECONOMIC CHANGE

During the 1990s, total employment in the Dillingham Census Area has risen from a low of 1,789 individuals in 1990 to a high of 2,113 individuals in 1994. Much of the economic activity in the area is expected to remain concentrated around the nearby sockeye salmon fishery, which results in massive seasonal fluctuations in total manufacturing (seafood processing) employment. Future growth in service-related industries is expected to remain heavily dependent on the success of local fisheries and the level of total government employment in the census area. Table 3.17 shows industry-specific employment in the census area between 1990 and 1996.

Table 3.17
Wage and Salary Employment by Industry – Dillingham Census Area – 1990-1996

Industry	**1990**	**1991**	**1992**	**1993**	**1994**	**1995**	**1996**
Mining	N/A	N/A	N/A	N/A	N/A	3	3
Construction	10	24	34	27	30	50	43
Manufacturing*	762	902	N/A	704	747	480	432
TCU**	106	159	141	142	130	107	161
Wholesale Trade	106	N/A	N/A	N/A	N/A	1	2
Retail Trade	187	142	151	209	222	223	207
FIRE***	49	48	59	55	85	80	75
Services	422	462	492	551	571	569	609
Agriculture, Forestry, Fishing	N/A	N/A	N/A	N/A	N/A	0	0
Federal Government	55	55	63	56	56	54	50
State Government	70	64	62	58	59	60	64
Local Government	403	443	433	431	439	429	420
Total Employment	1,789	1,944	2,024	2,079	2,113	2,055	2,064

** Includes seafood processing. ** Transportation, communications, and utilities. *** Finance, insurance, and real estate.*

Note: Shaded numbers are estimated. Total employment may not equal the sum of industry-specific numbers, since multiple data sources are represented.

The ADOL does not include independent fish harvesters in their employment estimates. However, data on independent fish harvesters are provided separately for the years 1990 and 1995 (years for which data are available).

Kodiak Island Borough

Kodiak's economy is driven by the commercial fishing industry and is supported by the tourism industry, timber harvesting, the Coast Guard, and associated service and support industries. In 1995, over 41 percent of the 6,308 employed individuals in the Kodiak Island Borough worked in the manufacturing sector. The overwhelming majority of employment of in this sector was associated with the seafood processing industry. In addition to the commercial fishing industry, the U.S. Coast Guard has a significant impact on the island economy. According to the February 1996 issue of *Alaska Economic Trends*, 2,516 Coast Guard personnel and dependents (comprising nearly 17 percent of the island population) lived on Kodiak Island in 1995. Additionally, approximately 320 individuals were employed in base support activities. State and local government organizations employed 982 individuals in 1996 accounting for approximately 15 percent of total employment on the island. Service and support industries, including TCU, wholesale and retail trade, and FIRE accounted for an additional 21 percent of total employment within the borough.

PRIVATE SECTOR BASIC INDUSTRIES

Fisheries (Seafood Processing/Manufacturing)

Kodiak is regularly ranked as one the nation's top seafood ports in terms of both volume and value of fish landed. Not surprisingly, the seafood industry is the driving force behind Kodiak's economy. The harvesting of salmon and groundfish dominate Kodiak's seafood production. Herring, shellfish, and halibut harvesting takes place from the island. The February 1996 issue of *Alaska Economic Trends* reported that eight of Kodiak's seafood processing plants were among the 15 top employers on the island. However, nearly 50 percent of Kodiak wage and salary earners (many employed in seafood processing) were estimated to be nonresidents in 1993. The University of Alaska Fisheries Industrial Technology Center based on Kodiak Island researches new seafood markets and products. Increasing international competition in the salmon industry and the emergence of halibut fishery IFQs may result in a future decline in overall seafood industry employment. However, the seafood/fishing industry should remain an integral part of the Kodiak economy for some time.

Construction

Data on construction-related employment in the borough was not available, indicating limited or seasonal participation in the industry.

Mining

No data on mining-related employment were available, which would appear to indicate that very little (or no) mining activity is taking place on the island. However, there is at least an indication that some mining is taking place within the borough. Between 1990 and 1995, 467 short tons of non-ferrous ores were shipped out of Kodiak.

Subsistence

So long as adequate resources are available, subsistence harvests should remain an integral part of traditional Sugpiaq lifestyles practiced in the region. According to 1990 Census data, Alaska Natives accounted for approximately 16 percent of the Kodiak Borough's population.

Private Sector Support Industries

The number of total individuals employed in service and support industries in Kodiak has risen from a low of 663 individuals in 1986 to a high 1,040 in 1989. As a percentage of total

employment on the island, however, service and support employment has remained relatively constant fluctuating from a low of 13 percent in 1986 to a high of 18 percent in 1989 and 1990 (approximately 16 percent of working individuals in the borough were employed in service and support industries in 1996). Many of the job opportunities in this sector are concentrated in the city of Kodiak, the administrative and population center for the island. However, significant civilian service sector employment is also associated with the Coast Guard base on the island.

GOVERNMENT

According to the February 1996 issue of *Alaska Economic Trends*, 2,516 Coast Guard personnel and dependents (comprising nearly 17 percent of the island population) lived on Kodiak Island in 1995. Additionally, approximately 320 individuals were employed in base support activities. State and local government organizations employed 981 individuals in 1996 accounting for approximately 15 percent of total employment on the island. Since 1986, state and local government employment as a percentage of total employment has fluctuated from a high of 19 percent in 1986 and 1988 to around 15 percent in 1996. Total federal and state government employment may fall as funding transfers to the region are reduced.

SUMMARY OF PLANNING AREA ECONOMIC CHANGE

Over the last 10 years, total employment on Kodiak has fluctuated from a low of 4,734 individuals in 1987 to a high 6,308 individuals in 1996. Future employment change will remain closely tied to the total number of individuals employed in government organizations and the continued health of the salmon and groundfish industries. Table 3.18 shows industry-specific employment in the borough between 1990 and 1996.

Table 3.18
Wage and Salary Employment by Industry – Kodiak Island Borough – 1986-1996

Industry	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
Mining	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Construction	276	198	180	180	158	160	164	142	154	186	158
Manufacturing*	1,733	1,569	1,479	1,671	2,062	2,091	1,810	1,885	2,260	2,350	2,584
TCU**	188	222	230	664	319	320	0	323	301	343	303
Wholesale Trade	52	50	57	49	36	41	45	68	72	91	68
Retail Trade	706	776	786	841	886	870	806	759	769	870	815
FIRE***	110	108	116	106	111	113	136	135	148	141	145
Services	663	664	826	1,040	1,018	955	828	823	890	928	999
Agriculture, Forestry, Fishing	27	39	N/A	34	40	15	52	62	100	85	95
Federal Government	243	234	193	161	162	165	174	171	166	162	158
State Government	266	237	248	282	285	275	277	263	252	248	251
Local Government	700	610	671	656	673	677	669	681	695	682	731
Total Employment	4,981	4,734	4,835	5,685	5,742	5,691	5,318	5,320	5,811	6,090	6,308

** Includes seafood processing. ** Transportation, communications, and utilities. *** Finance, insurance, and real estate.*

Note: Shaded numbers are estimated. Total employment may not equal the sum of industry-specific numbers, since multiple data sources are represented. The ADOL does not include independent fish harvesters in their employment estimates. However, data on independent fish harvesters are provided separately for the years 1990 and 1995 (years for which data are available).

Lake and Peninsula Borough

The Lake and Peninsula Borough was incorporated in 1989 and includes the communities of Chignik, Chignik Lagoon, Chignik Lake, Egegik, Igiugig, Iliamna, Ivanof Bay, Kokhanok, Levelock, Newhalen, Nondalton, Pedro Bay, Perryville, Pilot Point, Port Alsworth, Port Heiden, and Ugashik. The borough's economy is based on commercial and sport fishing, sport hunting, government employment, and tourism. In 1996, 612 individuals were employed in the borough. Manufacturing (seafood processing) and services each accounted for approximately 28 percent of total employment. Federal, state, and local government accounted for another 31 percent of total employment. Approximately 73 percent of all public sector employment was with local government organizations. Mining and oil and gas exploration activities have taken place within the borough. However, no commercial developments have taken place.

PRIVATE SECTOR BASIC INDUSTRIES

Fisheries (Seafood Processing/Manufacturing)

Most commercial fishing activity in the region is associated with salmon. Herring and halibut harvesting also takes place from the borough. Total manufacturing (seafood processing) employment in the Lake and Peninsula Borough in 1996 was 169, or 28 percent of total reported employment in the borough. Manufacturing as a percentage of total employment in the borough has declined significantly: from 69 percent in 1990 to 28 percent in 1996. The substantial drop is the result of a number of factors including declining total salmon harvests in the region, reductions in cod harvesting activity from the borough, and the closure of a former local processor. Future employment in the sector will partly depend on the strength of salmon runs, processor activity, and participation in fisheries other than salmon.

Construction

Data on construction-related employment in the borough was not available, indicating limited participation in the industry.

Mining

No data on mining-related employment were available. This indicates that very little (or no) mining activity is taking place on the peninsula. Mining and oil and gas exploration activities have taken place within the borough. However, no commercial developments have taken place.[5]

Subsistence

The Lake and Peninsula borough is home to a number of Alaska Native groups including Aleuts, Athabascans, Yup'ik Eskimos, and Sugpiaq Eskimos. According to 1990 Census data, Alaska Natives accounted for approximately 76 percent of the Lake and Peninsula Borough's population.

Private Sector Support Industries

The number of total individuals employed in service and support industries in the Lake and Peninsula Borough has grown steadily since 1990. This increase in service and support sector employment has closely followed the growth in local government employment in the borough. Combined, employment in TCU, trade, FIRE, and services including tourism, has grown to a high of 41 percent of all employed borough residents in 1996. Tourism is also an important

[5] Source: Walt Wrede, Lake and Peninsula Borough Manager.

component of the economy. The Lake and Peninsula Borough currently estimates that there are approximately 100 lodges and bed and breakfast establishments, and at least 200 professional guides, operating within the borough. Activity in these sectors is expected to continue to closely follow changes in commercial fishing and government employment.

GOVERNMENT

In 1996, 190 individuals in the Lake and Peninsula Borough were employed in government. Of all government employees, 73 percent were employed with local government organizations. Remaining government employment included 43 federal government employees and eight state government employees. Since 1990, government employment as a percentage of total employment in the borough has fluctuated from a low of 28 percent in 1991(complete 1990 data were not available) to a high of 32 percent in 1994. Although government employment in the borough has grown steadily during the 1990s, future levels of employment may fall as federal and state expenditures in the region decline.

SUMMARY OF PLANNING AREA ECONOMIC CHANGE

Since 1990, total reported employment in the borough has fluctuated from a low of 517 in 1991 to a high of 627 in 1993. In every year, economic activity has been dominated by the commercial fishing industry and supported by employment in government organizations. Employment in service and support industries has followed government employment activity since 1990. Future economic development activity, including infrastructure development, is expected to remain closely tied to the commercial fishing/seafood processing industries in the region. Reductions in total government employment in the borough are possible as federal and state expenditures in the region decline. Table 3.19 shows industry-specific employment in the borough between 1990 and 1996.

Table 3.19
Wage and Salary Employment by Industry – Lake and Peninsula Borough – 1990-1996

Industry	1990	1991	1992	1993	1994	1995	1996
Mining	N/A	N/A	N/A	N/A	N/A	0	N/A
Construction	N/A	N/A	N/A	N/A	N/A	0	1
Manufacturing*	350	236	205	298	199	196	169
TCU**	35	35	38	37	50	42	47
Wholesale Trade	N/A	N/A	N/A	N/A	6	5	5
Retail Trade	11	14	12	20	16	22	23
FIRE***	7	8	10	9	6	6	9
Services	99	122	113	128	150	160	167
Agriculture, Forestry, Fishing	N/A	N/A	N/A	N/A	N/A	0	N/A
Federal Government	34	42	49	63	61	49	43
State Government	N/A	10	9	8	9	7	8
Local Government	87	96	110	120	128	133	139
Total Employment	517	530	551	627	625	620	612

** Includes seafood processing. ** Transportation, communications, and utilities. *** Finance, insurance, and real estate.*

Note: Shaded numbers are estimated. Total employment may not equal the sum of industry-specific numbers, since multiple data sources are represented.

The ADOL does not include independent fish harvesters in their employment estimates. However, data on independent fish harvesters are provided separately for the years 1990 and 1995 (years for which data are available).

3.4 COMMUNITY SERVICES

Modern Southwest Alaska communities continue to be influenced by traditional Native cultures and councils, churches and U.S. military installations. The commercial fishing and seafood processing industries are however, the driving force of the region's economy and consequently contribute much to contemporary culture as well. As it pertains to transportation planning, the significant seasonal ebb and flow of industrial workers and production is a major determinant of existing transportation networks, facilities and travel patterns. The public service sector associated with government and military expenditures runs a close second in this regard.

Southwest Alaska's year-round residents need basic access to health services, education, commodities, legal, government and social services. Many of these services are provided within the local community, while in some cases accessing public services can still require long-distance travel. For example, schools are found in almost every community and the number of students ranges from nine to 2,252. Only students in Ugashik, South Naknek, King Salmon, Iliamna and Ekuk travel daily outside their community to attend school, yet interscholastic sports teams from all over Southwest Alaska travel to nearby communities on a regular basis and occasionally as far north as Nome to participate in activities. Much of these travel costs are paid for by the state. As for medical services, there are only four hospitals in the study region: two in Kodiak, one in Dillingham, and one (now decommissioned) military hospital on Adak. Otherwise, residents depend on local health clinics and/or emergency fire/medical services for care.

Table 3.20 describes public community characteristics for the entire study area. Borough government seats are designated with an asterisk and communities are listed in descending population order. A summary of these elements by planning area is listed below. Please note that the school attendance data are from the 1996-1997 school year (Laura Walters, personal correspondence, January 16, 1997. Department of Community and Regional Affairs, State of Alaska).

- **Aleutians East Borough –** six communities including five incorporated cities, one unincorporated village; six schools (one in each year-round community) attended by 373 students.
- **Aleutians West Census Area –** 5 communities (including the Pribilof Islands), three military installations; six schools (two in Unalaska) attended by 645 students.
- **Bristol Bay Borough –** three communities; three schools (none in King Salmon, though most other public services are located there) attended by 319 students.
- **Dillingham Census Area –** eleven communities; eleven schools (two in Dillingham) attended by 1,209 students.
- **Kodiak Island Borough –** eleven communities; 16 schools (eight in Kodiak) attended by 2,882 students.
- **Lake and Peninsula Borough –** 17 communities including six incorporated cities; 15 schools (none in Ugashik or Iliamna) attended by 550 students.

Table 3.20
Community Profiles

Community	Planning Area	Schools	Students	Hospitals	Health Clinics	Other Emergency Services
Cities >1000						
Kodiak*	Kodiak Island Bor.	8	2252	2	1	Yes
Unalaska	Aleutians West C.A.	2	415	–	1	Yes
Dillingham	Dillingham C.A.	2	507	1	1	Yes
Kodiak Station	Kodiak Island Bor.	1	356	–	1	No
Communities of 500-1000						
King Cove	Aleutians East Bor.	1	140	–	1	Yes
Sand Point*	Aleutians East Bor.	1	145	–	1	Yes
Togiak	Dillingham C.A.	1	221	–	1	Yes
Saint Paul	Aleutians West C.A.	1	154	–	1	Yes
Womens Bay	Kodiak Island Bor.	–	–	–	–	Yes
Naknek*	Bristol Bay Bor.	2	301	–	1	Yes
Adak	Aleutians West C.A.	–	–	1	–	No
Communities of 250-500						
King Salmon*	Bristol Bay Bor.	–	–	–	1	Yes
New Stuyahok	Dillingham C.A.	1	154	–	1	Yes
Akutan	Aleutians East Bor.	1	24	–	1	Yes
Manokotak	Dillingham C.A.	1	129	–	1	Yes
Old Harbor	Kodiak Island Bor.	1	92	–	1	Yes
Port Lions	Kodiak Island Bor.	1	60	–	1	Yes
Ouzinkie	Kodiak Island Bor.	1	44	–	1	Yes
Nondalton	Lake & Pen. Bor.	1	84	–	1	Yes
Communites <250						
Aleknagik	Dillingham C.A.	1	50	–	1	Yes
Koliganek	Dillingham C.A.	1	78	–	1	Yes
Saint George	Aleutians West C.A.	1	44	–	1	Yes
Newhalen	Lake & Pen. Bor.	1	90	–	1	Yes
Kokhanok	Lake & Pen. Bor.	1	58	–	1	Yes
South Naknek	Bristol Bay Bor.	1	18	–	1	No
Chignik Lake	Lake & Pen. Bor.	1	57	–	1	Yes
Port Heiden	Lake & Pen. Bor.	1	28	–	1	Yes
Cold Bay	Aleutians East Bor.	1	22	–	1	Yes
Egegik	Lake & Pen. Bor.	1	18	–	1	No
Chignik	Lake & Pen. Bor.	1	26	–	1	Yes
Larsen Bay	Kodiak Island Bor.	1	19	–	1	Yes
Ekwok	Dillingham C.A.	1	38	–	1	No
Levelock	Lake & Pen. Bor.	1	29	–	1	Yes
Atka	Aleutians West C.A.	1	22	–	1	Yes
Iliamna	Lake & Pen. Bor.	–	–	–	1	Yes
Perryville	Lake & Pen. Bor.	1	40	–	1	Yes
Akhiok	Kodiak Island Bor.	1	21	–	1	Yes
Chignik Lagoon	Lake & Pen. Bor.	1	38	–	1	Yes
Pilot Point	Lake & Pen. Bor.	1	26	–	1	No
False Pass	Aleutians East Bor.	1	29	–	1	Yes
Nelson Lagoon	Aleutians East Bor.	1	13	–	1	Yes
Chiniak	Kodiak Island Bor.	1	24	–	–	Yes
Twin Hills	Dillingham C.A.	1	11	–	1	Yes
Clarks Point	Dillingham C.A.	1	12	–	1	Yes
Port Alsworth	Lake & Pen. Bor.	1	19	–	0	Yes
Karluk	Kodiak Island Bor.	1	14	–	1	Yes

Table 3.20 (cont.)

Community	Planning Area	Schools	Students	Hospitals	Health Clinics	Other Emergency Services
Igiugig	Lake & Pen. Bor.	1	15	–	1	No
Pedro Bay	Lake & Pen. Bor.	1	11	–	1	Yes
Ivanof Bay	Lake & Pen. Bor.	1	11	–	1	No
Nikolski	Aleutians West C.A.	1	10	–	1	No
Shemya Station (closed in 1995)	Aleutians West C.A.	–	–	classified	classified	classified
Portage Creek	Dillingham C.A.	1	9	–	–	Yes
Ugashik	Lake & Pen. Bor.	–	–	–	–	Yes
Ekuk	Dillingham C.A.	–	–	–	–	Yes
Unga (subsistence area)	Aleutians East Bor.	–	–	–	–	No
Amchitka (closed in 1994)	Aleutians West C.A.	–	–	classified	classified	classified
Attu Station	Aleutians West C.A.	N/A	N/A	N/A	N/A	N/A
Totals	***57 places, 6 areas***	***57***	***5978***	***4***	***46***	***9 without***

* *Borough seat – Lake and Peninsula Borough offices are located in King Salmon, although King Salmon is in the Bristol Bay Borough. Italics indicate zero year-round residents. Sources: Department of Community & Regional Affairs; Department of Labor (1996 population estimates).*

3.5 VISITOR ATTRACTIONS

Regional Overview

Southwest Alaska is a large, culturally and geographically diverse region of the state, curving over 1700 miles from the low, windswept islands at the end of the Aleutian chain, to the inland mountain spires of Lake Clark National Park and Preserve. While rich in intrinsic tourism attractions, relative to other regions of the Alaska, the Southwest region currently has little tourism "infrastructure", and relatively few visitors (about 7 percent of all out-of-state travelers to Alaska).[6] For most travelers, the region is not well known, access to and within the region is viewed as costly, and accommodations and other tourist services are limited. Although until recently most locals had been ambivalent about encouraging tourism, interest is now increasing.

While a destination for relatively few visitors, Southwest Alaska does have a diverse array of the types of attractions that currently draw people to other parts of Alaska. These include impressive parks and wildlife refuges, abundant fish and wildlife, and a rich cultural history. Southwest offers spectacular, varied landscapes including thousands of miles of wilderness coastline, glacier covered peaks, and the majority of the state's largest freshwater lakes. The region's southern coast and the Aleutian Islands mark the zone where the Pacific plate slides under the North American continent. One result is a string of over 60 volcanoes punctuating the landscape from Mt. Iliamna and Mt. Redoubt, Augustine Island, and then south through Katmai and continuing down the Aleutian chain.

The one category of tourism well-established in Southwest Alaska is sport fishing and hunting. Serious hunters and anglers have been coming to Bristol Bay for over 50 years. Over two hundred remote lodges and temporary camps offer trips from the most luxurious to the most basic.

Opportunities for the types of travel that are most common in other parts of Alaska, particularly package tours and cruise trips, have been very limited in Southwest Alaska. However, in the last five years the patterns of tourism in Southwest Alaska have begun to shift. Growth in lodge-based guided sport hunting and fishing has stabilized. In recent years the fastest growing segments of the market have been unguided hunting and fishing, and non-consumptive tourism activities such as bear watching. Cultural attractions have also been developed and are attracting increasing numbers of visitors. Communities in the region, particularly Kodiak and Unalaska, have made major strides in attracting visitors, through a combination of improved lodging, improved attractions, and better organized marketing.

Regional Attractions and Activities

The following is a summary of the major regional visitor attractions and activities. Appendix B provides more detail regarding attractions in individual communities, parks, and refuges in Southwest Alaska.

---

[6] References to Southwest Alaska, and comparisons of Southwest Alaska to other regions of Alaska use regional boundaries established by the Alaska Visitor Statistics Program (AVSP). This program defines 5 major regions in Alaska: Southeast, Southcentral, Denali, Northern (with includes Fairbanks, Bethel, Tok, and the entire northern half of Alaska) and Southwest. Southwest in the AVSP has the same boundaries as those used in this study.

HUNTING AND FISHING

Southwest Alaska has some of the most productive fish producing waters on earth. The streams and lakes of the Bristol Bay, Kodiak, and Alaska Peninsula areas are known around the world for trophy salmon, rainbow trout and other species. Saltwater sportfishing is also excellent. Kodiak and Unalaska have extensive charter sportfishing fleets, and in the last several seasons Unalaska has produced world record halibut. Southwest Alaska also continues to have a strong reputation for good hunting, particularly for caribou and brown bear in Kodiak and along the Alaska Peninsula. Hunting interest has grown recently with the rapid growth of the Mulchatna caribou herd.

WILDLIFE VIEWING

The wild ecosystems of Southwest Alaska support a great diversity and abundance of wildlife, and offer some of the world's best places to see interesting fauna (and flora). One measure of the region's bounty is the fact that there are 50,000,000 salmon, 250,000 caribou, 10,000 brown bears and only 7,000 people in the entire Bristol Bay area. Bristol Bay and Kodiak are rivals for the claim of greatest density and size of brown bear populations, and bears are at the top of travelers' lists of sought-after wildlife viewing opportunities. Among the region's most renowned wildlife viewing areas are bear watching destinations at McNeil River, the increasingly popular area along the outer Katmai coast, at Brooks Camp, and along several streams on Kodiak. The Mulchatna caribou herd is a growing wildlife resource for both viewing and hunting. The Mulchatna herd roams over a vast area, from Lake Clark to the Alaska Peninsula, the middle Kuskokwim drainage and west to the coast near Togiak. World class bird watching areas include the Pribilofs and the Aleutians, and great walrus viewing is available at Round Island near Togiak.

PARKS/REFUGES

The Southwest region has Alaska's largest concentration of state and federally protected lands. Federal reserves include Lake Clark and Katmai National Parks; Aniakchak National Monument; Kodiak, Togiak, Becharof, Alaska Peninsula, Izembek and Alaska Maritime National Wildlife Refuges. State protected lands include a number of relatively small areas that have been designated by the Legislature for hunting, fishing, wildlife observation, and to protect fish and wildlife habitat. Examples include the Walrus Islands and McNeil River State Game Sanctuaries, and critical habitat areas near Port Heiden, Pilot Point, and Egegik. Also included in the Southwest are two major state parks: Wood Tikchik north of Dillingham, and Shuyak Island, northeast of Kodiak.

ADVENTURE TRAVEL: HIKING/RAFTING/CLIMBING

Southwest has many lifetimes worth of wilderness to explore on foot or by boat. While the potential for wilderness adventure is almost limitless, actual use is limited. There are very few developed trails. The most popular, frequently used hiking areas are in those portions of Katmai and Lake Clark National Parks where access is less costly, and the terrain is open and inviting, such as hikes into the Katmai pass area from the Valley of 10,000 Smokes, and south of Telaquana Lake towards Lake Clark. Rafting and boating in the areas many rivers is more common, although typically linked to hunting and fishing activities.

CULTURAL ATTRACTIONS

The cultural history of Southwest Alaska is as rich and fascinating as the region's natural history, and is also at the early stages of being made accessible to travelers. Some of the earliest recorded sites of human occupation in North America are located in Southwest Alaska. Southwest is unique among Alaska's regions because it is home to four distinct Native cultures, each with its own 5000 plus year record of history. These cultures are the Alutiiq people of Kodiak and the Katmai Coast, the Aleuts of the Aleutian Peninsula and islands, Yup'ik Eskimos of Bristol Bay, and the Athabascan culture that extends from interior Alaska into the Lake Clark/Lake Iliamna area. The Aleuts living on the Pribilofs are descendents of Aleuts forcibly relocated by the Russians to support the fur seal trade. Opportunities to learn about this remarkable history are growing. Museums and visitor centers in Dillingham and King Salmon have small collections of artifacts, and the much larger Alutiiq Museum recently opened in Kodiak. Two tour companies now let visitors take part in archeological excavations under the supervision of archeologists. Brooks Camp, considered to be one North America's most important archeological sites, has a recreated barabara and limited cultural interpretive information.

Most Americans are unaware of the extent of European exploration and settlement in Alaska. While the familiar east to west history of America was unfolding in the lower 48, Alaska was the scene of substantial development, beginning in the late 1700s, principally by the Russians seeking furs. Few people know, for example, that the oldest wood building on the west coast of the U.S. is in Kodiak (it currently houses the Baranof Museum). Much of this more recent history remains visible in Southwest, including many Russian Orthodox churches and the sites of Russian forts. Particularly striking is the beautifully restored Church of the Holy Ascension in Unalaska and its collection of original icons. A more recent, and relatively little-known historical attraction is the WWII history of the Aleutian Chain and the Kodiak Archipelago.

COMMUNITIES/ACCOMMODATIONS/BUILT ATTRACTIONS

While surveys show that the primary reason people travel to Alaska is to experience scenery and wildlife, the bulk of visitor's time is spent in communities, on roads, rails, or otherwise within human-built towns and facilities. Compared to other regions of the state, Southwest Alaska communities are less oriented in these regards towards serving visitors. Kodiak is an exception, with a good mix of museums, galleries, shops and stores, an array of accommodations, and a host of easy ways to access the surrounding wilderness. Dillingham, King Salmon/Naknek and Unalaska all offer lesser, but still appealing opportunities. Unalaska has made the biggest leap forward in recent years, having gone through a process of polling its residents, investing in a major hotel (a private project) and developing an aggressive and effective marketing campaign.

4. TRANSPORTATION SYSTEM

Geography has limited inter- and intra-regional transportation in Southwest Alaska to primarily two modes: air and water. Because of the great distances between communities within and outside of the region, time-sensitive travel and movement of lighter goods is typically done by air, while other travel – particularly movement of bulky or heavy cargo – is typically conducted by water.

4.1 MARINE TRANSPORTATION

Needless to say, marine transportation is one of the two vital modes of transport in the region. Marine travel in the form of fishing vessels, and the ability to provide safe passage and harbor for these vessels, is also a critical factor in the primary economy of the region – fisheries. This section provides an overview of marine transportation as it relates to regional transportation within, and into and out of Southwest Alaska. Elements discussed include marine facilities and navigation channels, Alaska Marine Highway System (AMHS) operations and patronage, private freight operators, and types and volumes of cargo within the region.

Marine Facilities

Marine facilities in Southwest Alaska are central to the region's economy, character, and accessibility. Utilitarian in nature, they have evolved to support the operations, marketing, and distribution of the region's remarkable fishery resource. They enable the supply of communities with fuel, food, and other commodities necessary to live in a region often characterized by long periods of isolation and a harsh climate. They also serve the Alaska Marine Highway system, which currently has ten ports of call in the Southwest region, each of which requires docking, loading, and offloading capacity.

Due to the tremendous importance of the commercial fishing industry in Southwest Alaska, the region's predominant facility type is one that accommodates the offloading, serving and supplying of fishing vessels. In many communities, these docks serve as cargo vessels as well, receiving barge deliveries of fuel, vehicles, food, and other commodities for consumption within the area. They may be owned and operated publicly, privately, or by a public-private partnership.

Cargo vessel service to the area is characterized by regularly scheduled barge shipments from Anchorage and Puget Sound. A number of carriers, including Coastal Transportation, Crowley, Western Pioneer, and Samson, serve the market. This service is complemented by weekly liner calls at Kodiak and Unalaska by SeaLand and American President Lines (APL). Both SeaLand and APL extend their U.S.-Japan container routes to include these study area ports. Portions of the cargo unloaded by APL and SeaLand at Kodiak and Unalaska are redistributed to other Southwest Alaska communities by barge. Kodiak and Unalaska therefore play roles as hubs for commodity distribution as well as provide extensive support for the fishing industry. Also notable is the role played Sand Point and Akutan in providing freight transshipment points for finished fish products to Unalaska. For example, SeaLand has operated feeder service from Sand Point to Akutan and to Unalaska for years.

In Southwest Alaska, small boat harbors in particular, may fulfill as basic a transportation and economic need as do highways or airports in other areas. The needs of individual vessel owners, who are in large part responsible for the actual harvesting of the region's economic mainstay, need a safe place in which to moor, repair, outfit and fuel their vessels, which generally represent a considerable personal investment. With regard to small boat harbors, it is also important to bear in mind the element of transience innate in Alaska fishing. It is important

that small boat harbors have enough capacity to accommodate fluctuations in demand due to changes in fishing conditions within and outside the region. There is some question as to whether transportation and economic needs met by small boat harbors in particular, and marine facilities more generally, are adequately addressed in the state transportation policy and planning process.

This section discusses types of marine facilities found throughout the region and then summarizes the facilities by each of the region's six community planning areas.

FACILITY CLASSIFICATION

For purposes of this report, Southwest Alaska marine facilities have been classified into four basic types as summarized below. A community may contain any combination of facility types. Figure 2 indicates communities within the region that have port facilities in at least one of the categories described below.

Commercial Service Facilities

- Accommodate interstate and international cargo receipt and shipment;
- Minimum draft -20'.

The distinguishing characteristic of a Commercial Service Facility is its ability to consistently serve vessels on international trade routes. Two communities provide Commercial Service Facilities in the study area:

- Kodiak
- Unalaska

Community Service Facilities

- Accommodate community supply, people movement.
- May accommodate intra-Alaska fish product and/or interstate cargo movement
- Maximum drafts < -20'.

Community Service Facilities include both public and private docks accommodating delivery and shipment of fresh fish and fish products. The following communities, organized by Community Planning Area, were identified as providing Community Service Facilities:

Aleutians East Borough
- Cold Bay
- False Pass
- Akutan
- King Cove
- Sand Point

Aleutians West Census Area
- Atka
- St. Paul
- St. George
- Unalaska

Bristol Bay Borough
- Naknek
- South Naknek

Dillingham Census Area
- Aleknagik
- Clarks Point
- Dillingham

Kodiak Island Borough
- Kodiak
- Port Lions
- Old Harbor

Lake and Peninsula Borough
- Chignik
- Egegik
- Ugashik (cannery dock)
- Pilot Point
- Iliamna

Akutan		⚓	
Aleknagik		⚓	
Atka		⚓	
Chignik		⚓	
Clark's Point		⚓	
Cold Bay		⚓	
Dillingham		⚓	⛵
Egegik		⚓	
False Pass		⚓	
King Cove		⚓	⛵
Kodiak	⚓	⚓	⛵
Naknek		⚓	
Old Harbor		⚓	⛵
Port Lions		⚓	⛵
Saint George		⚓	
Saint Paul		⚓	
Sand Point		⚓	⛵
South Naknek		⚓	
Ugashik		⚓	
Unalaska	⚓		⛵

Facility Types

⚓ *Commercial Service Ports*

⚓ *Community Service Ports*

⛵ *Fishing and Recreational Boat Moorage*

Saint Paul

Pribilof Islands

Saint George

Bethel
Chefornak
Tuntutuliak
Eek
Kipnuk
Kongiganak
Kwigillingok
Quinhagak
Kuskokwim Bay
Goodnews Bay
Platinum
Twin Hills
Togiak
Aleknagik
Manokotak
Ekuk
Clark's Point
Dillingham
Clark's Point
Koliganek
New Stuyahok
Ekwok
Levelock
Portage Creek
South Naknek
King Salmon
Naknek
South Naknek
Egegik
Bristol Bay
Pilot Point
Ugashik
Ugashik
Port Heiden
Chignik
Chignik Lagoon
Chignik Lake
Nelson Lagoon
Port Moller
Ivanof Bay
Perryville
Cold Bay
King Cove
Sand Point
Unga
False Pass
Akutan
Unalaska
Nikolski
Port Alsworth
Nondalton
Iliamna
Pedro Bay
Newhalen
Kokhanok
Igiugig
Anchorage
Kenai
Homer
Seldovia
Port Graham
Port Lions
Port Bailey
Ouzinkie
Womens Bay
Uganik
Karluk
Chiniak
Larsen Bay
Kodiak
Old Harbor
Akhiok
Study Area
Study Area
Seattle - Nome
Seattle - Yokohama

Scale 1:3500000
0km 100km 200km
0mi 100mi

N W E S

A A

Attu
Shemya Station
Approximate scale: 1:10,000,000
Aleutian Islands
Adak Station
Atka
Atka

A A

TRANSPORTATION & PUBLIC FACILITIES • STATE OF ALASKA •

HDR Alaska | PB 100 YEARS

File:	Date:	By:
swferry01.aml	11/11/97	PKW

Legend

Harbor Facilities, Ferry Routes, and Shipping Lanes

Public Port Facilities

Ferry Routes

Shipping Lanes

Area of Map

Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers

Marine Transport

Southwest Alaska Transportation Plan

Existing Conditions Technical Memorandum

FIGURE 3

Communities without dock facilities also require intermittent supply shipments and delivery of goods and people. Such deliveries are usually made by dropping cargo over the beach from barges or other vessels moored offshore. Communities receiving cargo in this manner are not included as Community Service Facilities.

Fishing and Recreational Boat Moorage

– Provide permanent and/or transient moorage for commercial fishing and recreational boats

The following communities were identified as having small boat harbors or marinas which accommodate boats of 100' length or less:

Aleutians East Borough
- Sand Point
- King Cove

Aleutians West Census Area
- Unalaska

Bristol Bay Borough
- None identified

Dillingham Census Area
- Dillingham

Kodiak Island Borough
- Kodiak: St. Paul and St. Herman's
- Old Harbor
- Port Lions

Lake and Peninsula Borough
- None identified

Alaska Marine Highway System Landings

Alaska Marine Highway System landings provide berthing, offloading, and onloading facilities for the Alaska ferry system, which provides the only commercial waterborne passenger transportation in the region, and also supplies commercial transport of vehicles and freight.

The following communities have Alaska Marine Highway System landings:

Aleutians East Borough
- Akutan
- Cold Bay
- False Pass
- King Cove
- Sand Point

Aleutians West Census Area
- Unalaska

Kodiak Island Borough
- Kodiak (St. Paul Harbor)
- Port Lions

Lake and Peninsula Borough
- Chignik

Facilities are summarized in the tables contained in the individual Community Planning Area discussions later in this section.

TERMINOLOGY

There are various terms and references common to marine facility discussions which are used in this report. Definitions for selected terms as used in this section are provided below.

Authorized project – A navigation project, generally authorized by Congress, which provides navigation channels, breakwaters, jetties, or other improvements to navigation.

Breakwater – An in-water structure protecting a harbor, shore area, basin or other exposed area from the full force of waves.

Controlling depth – The shallowest depths of the navigation channel which constitute the limit to navigation. Controlling depth will vary depending on the tidal cycle.

Project depth – The depth to which a project is maintained to ensure safe navigation. Usually, but not necessarily, the authorized depth.

Dolphins – A group of piles or large post providing tie-up for vessels. May be used in conjunction with pier or wharf to extend a facility's effective berthing length.

Lightering – Offshore transfer of cargo to a shallower draft vessel for final delivery to port or shore.

Spit – A slender peninsular-type land form extending into a body of water.

KODIAK ISLAND BOROUGH

The Kodiak Island area provides fishing, recreational, commercial, AMHS and U.S. Coast Guard harbor facilities to the Southwest Alaska area. The island's strategic location – south of Cook Inlet in the Gulf of Alaska's prime fishery – makes it an ideal location for fishing fleet moorage, fish processing and other fleet support services, as well as for Coast Guard operations in the Gulf of Alaska, Aleutians and Bering Sea.

Table 4.1 summarizes the marine facilities and services for the Kodiak Island Borough. The majority of the island's harbor facilities are in and around the city of Kodiak, located on the northeast portion of Kodiak Island. Two additional port areas on Kodiak provide publicly owned facilities on federally authorized channels: Port Lions, near the head of Settler Cove on the north end of the island, and Old Harbor, approximately 55 miles south of the Port of Kodiak on the southeast side of the island.

City of Kodiak

There is a federally authorized navigation project at Kodiak Harbor which provides for a channel between Near Island and Kodiak Island measuring 22' deep and 200' wide, and a small boat basin (St. Paul Small Boat Harbor) of 11.7 acres dredged to 12' and 8'. Two federally authorized breakwaters protect the small boat basin: 1,250' on the south and 760' on the east.

Port of Kodiak waterfront facilities stretch from Womens Bay northward through St. Paul Harbor. Facilities around Womens Bay are dominated by U.S. Coast Guard and commercial cargo operations. Commercial fishing and recreational moorage constitute the St. Paul Boat Harbor.

A new rubble-mound breakwater was completed in 1997 at the south end of the St. Herman's Small Boat Harbor in Dog Bay. The breakwater provides a protective arm around the southern portions of St. Herman's Harbor. With the breakwater in place, the City of Kodiak is planning on a new marina facility which will generally accommodate craft larger than 120'. Completion of the new facility is pending the identification of financing sources and a facilities implementation program.

The Alaska Marine Highway System uses City Pier No. 1 as the ferry landing at the City of Kodiak. The facility is a timber pile supported structure built in the 1960s and serves as a fueling pier, small freight wharf and a snow dumping facility in addition to the ferry terminal use. DOT&PF's *1995 Shore Facilities Condition Survey Report* identified the Kodiak facility as needing strengthening and refurbishing. The fendering system requires improvements to sufficiently withstand the loads placed by the *M/V Tustumena* which is the usual vessel calling at Kodiak. Ferry operations would also benefit from additional upland area to support vehicle and passenger staging. A new ocean-going ferry vessel is under construction by DO&TPF (the *M/V Kennicott*) but will be unable to call at the existing city of Kodiak terminal due to a lack of accommodating pier length and the lightweight fendering system now in place.[7] Whether

[7] The *M/V Kennicott* is physically capable of serving Kodiak via the City Pier No. 1. However, there is a problem insofar as the property line for the dock is near the ends of the dock, and the AMHS vessel extends beyond this property line when laying alongside this pier. The property at the end of the dock is owned by a fish processing facility that has historically permitted the *M/V Tustumena* to enter onto its private property. Because the *M/V Kennicott* is longer than the *M/V Tustumena*, it will extend farther onto this private property. Physically this is not currently a problem since a fire has destroyed the fish processing facility.

this vessel will be dedicated to routes visiting Kodiak is yet to be decided. Depending on the season, the AMHS averages three to four stops per week at Kodiak Island terminals.

Port Lions

Facilities at Port Lions are located at two separate areas. The Port Lions Small Boat Harbor and dock, owned by the State of Alaska and operated by the City, are located in the northwest portion of Settler Cove. The City's cargo dock, which also provides dock area for the AMHS' ferry landings, is located southeast of the small boat harbor behind Port Wakefield. The cargo dock facility is owned by the City of Port Lions.

The Port Lions' Small Boat Harbor has an authorized navigation project which consists of a 600' rock-fill breakwater, a stub breakwater which forms a harbor with the 600' breakwater, and a -14' harbor entrance channel. There are approximately 119 moorage slips plus a 67' dock with a hydraulic hoist at the Settler Cove facility.

The City's cargo dock on the Port Wakefield side is the city's port of call for the AMHS as well as general cargo, fueling, and seafood receipt. At Port Lions, AMHS vessels do not receive priority for landings and must rely on other vessel's ability and willingness to temporarily move.

Old Harbor

The authorized project at Old Harbor consists of a small boat basin, an entrance channel 60 feet wide and 600 feet long dredged to -8', and an earth-filled dike 1,200 feet long used to divert Big Creek freshwater from the basin area. The small boat harbor which is served by these improvements has berthing space for about 40 vessels. There is a general cargo and fuel dock located near the small boat harbor and another general cargo dock located near the concentration of community housing along Sitkalidak Strait. The AMHS does not call at Old Harbor.

Table 4.1 Kodiak Island Borough Marine Facilities and Services

FACILITY	OWNERSHIP	OPERATOR	BERTH SPACE	USE
WOMENS BAY				
Public Facilities:				
USCG Support Cntr	Federal	USCG	1,590'	Moorage
USCG Petro. Dock	Federal	USCG	570' x 2	Fueling USCG vessels.
USCG General Cargo	Federal	USCG	1088'	Cargo, moorage.
Nat'l Marine Fisheries	Federal	NA	200'	Not used.
Private Facilities:				
Seaport Terminal Services	LASH	STS/Samson Tug Barge	760'	Cargo
Seaport Terminal Services	LASH	STS	130'	Cargo, moorage.
Cook Inlet Processing	CIP	Same	350'	Seafood receipt; fish icing; supplies.
ST. PAUL HARBOR				
Public Facilities:				
Pier 3	City of Kodiak	Sea-Land	880' w/dolphins	Cargo
Fisherman's Terminal	City of Kodiak	Same	925'	Fish fleet support and general cargo.
St. Paul Small Boat Harbor	State	City of Kodiak	222 vessels	Mooring commercial vessels/recreational craft.
St. Paul Small Boat Harbor	State	City of Kodiak	180'+242'	Fishing vessel support.
St. Herman's Small Boat Harbor	*State*	*City of Kodiak*	*350 vessels*	*Mooring commercial vessels/recreational craft.*
City Pier No. 1	City of Kodiak	State	204'	AMHS Ferry landing; fueling.
Transient Float	City of Kodiak	State	425'	Mooring transient vessels.
Private Facilities:				
Kodiak Oil Sales	Kodiak Oil Sales	Same	250'	Petro receipt; fueling.
Kodiak Wharf, Alaska Pacific Seafoods	APS	Same	325'	Seafood receipt; fish icing.
Kodiak Wharf, King Crab	King Crab, Inc	Same	650'	Seafood receipt; fish icing.
Kodiak Wharf, W. Alaska Fisheries	WAF	Same	500'	Seafood receipt; fish icing.
Kodiak Wharf, Int'l Seafoods of Alaska	ISA	Same	290'	Seafood receipt; fish icing.
Kodiak Lower, Ursin Seafoods	Ursin Seafood	Same	160'	Seafood receipt; fish icing.
Kodiak Pier, Madjic & Sons	Madjic & Sons	Same	440'	Mooring vessels; supplies.
Kodiak Upper, Ursin Seafoods	Ursin Seafoods	NA	60'+130'+125'	Not used.
Roxanne Dock, Ursin Seafoods	Ursin Seafoods	NA	70'	Not used.
Kodiak Lower, Faros	Faros Seafoods	Same	50'	Seafood receipt.
Kodiak Upper, Faros	Faros Seafoods	Same	110'	Mooring vessels; supplies.
Kodiak Dock, Alaska Fresh Seafoods	Alaska Fresh Seafoods	Same	450'	Seafood receipt; fish icing; supplies.
Kodiak Dock, All Alaskan Seafood	All Alaskan	NA	75	Not used.
Star of Kodiak Wharf; All Alaskan Seafood	All Alaskan	Same	275'	Seafood receipt; fish icing; supplies.
Kodiak Terminal Fuel Float	Petro Marine Services	Same	150'	Fueling vessels.
Kodiak Dock, East Pt. Seafoods	Queen Fisheries	East Point Seafoods	280'	Seafood receipt, supplies.
Kodiak Plant No.1 Wharf	Int'l Seafoods of Alaska	Same	110'	Seafood receipt; fish vessel icing.
Kodiak Wharf, US Marine Fisheries Supply	U.S. Marine Fisheries Supply	Same	130'	Fishing vessel supplies.
Lower Dock, Fuller's Boat Yard	Fuller's Boat Yard	NA	340'	Not used.
Upper Dock, Fuller's Boat Yard	Fuller's Boat Yard	Same	100'	Mooring vessels; small vessel haul-out.
PORT LIONS				
Public Facilities:				
Small Boat Harbor Dock	State	City of Port Lions	67'	Supplies and equipment for fishing vessels.
Small Boat Harbor	State	City of Port Lions	82 vessels	Mooring commercial vessels/recreational craft.
City Dock	City of Port Lions	City and State	250	Cargo receipt; AMHS landing.
OLD HARBOR				
Public Facilities:				
Old Harbor City Dock	City of Old Harbor	City/Old Harbor Fuel Co.	160' w/ dolphins	Gen'l cargo and petroleum receipt.
Small Boat Harbor	City of Old Harbor	City of Old Harbor	562'	Mooring commercial vessels/recreational craft.
Small Boat Harbor Dock	City of Old Harbor	City of Old Harbor	165'	Supplies and equipment for fishing vessels.

Source: Ogden Beeman & Associates, Inc.; U.S. Army Corps of Engineers.

ALEUTIANS EAST BOROUGH

The Aleutians East Borough communities provide support for the Gulf of Alaska, Bristol Bay and Bering Sea fishing industries. Facilities at King Cove, False Pass, Cold Bay, Sand Point, and Akutan are predominantly oriented to handling seafood processing and fishing vessel supply. As is typical in Alaska, these facilities often serve other purposes as well depending on specific cargo or seasonal requirements. Table 4.2 summarizes the marine facilities by community in the Aleutians East Borough.

Akutan

Trident Seafoods operates a major bottomfish processing plant at Akutan. The plant is located just west of town where the city-owned dock accommodates receipt and shipment of general cargo, receipt of petroleum and passenger trips on the AMHS. Currently vehicle loadings and unloadings are not accommodated in conjunction with ferry stops.

There is no authorized navigation project at Akutan. Although Akutan does not yet have a boat harbor to accommodate small commercial or recreational vessels, a study effort by the AEB, the Corps of Engineers and the State is underway to determine the feasibility of building such a facility.

Cold Bay

The single marine facility in Cold Bay is the city dock that provides for receipt of containerized and general cargo, petroleum receipts, vessel fueling and the AMHS landings. The dock approach extends over 1,800 feet from the shore and at this distance the 60'x360' facility enjoys a 34' depth.

Cold Bay is an important fueling stop for the commercial fishing fleet. Frosty Fuel Co. maintains a 90,000 barrel capacity at Cold Bay, the largest in the East Aleutians.

The city dock accommodates passenger and vehicle landings from the AMHS. Recent annual passenger counts ranged from 216 in 1990 to 73 in 1994.

False Pass

Like Cold Bay, False Pass is an important processing, fueling and supply outpost for the commercial fishing industry. The channel linking Bristol Bay and the Gulf of Alaska at False Pass provides a short-cut for vessels wanting to avoid the longer trip through Unimak Pass to the south. However, the passage is often treacherous, especially during the winter months, and causes vessels to "congregate" around False Pass while waiting for improved conditions.

The community dock at False Pass is relatively new, its construction being completed in 1992. A 450' approach trestle joins the 175' x 40' dock with the shore and allows both passenger and vehicle AMHS loading at the facility. Mooring dolphins extending the effective length of the dock by 50' at each end were added in 1997. Peter Pan Seafoods has two timber pile docks which serve various purposes as needed.

During a reconnaissance study of needed improvements conducted by the Alaska District, U.S. Army Corps of Engineers (1997), False Pass indicated a strong desire for a harbor and breakwater to accommodate the local and seasonal fishing fleet. Local fishers currently are deterred from fully working the commercial fishery because of a lack of moorage and safe harbor facilities.

King Cove

King Cove is the only community in the Aleutians East Borough with an authorized navigation project: the project provides for an 11 acre boat basin, an entrance channel 125' wide and 950' long maintained to -15' and protected by an earth-fill training dike and rock-fill groin. The boat harbor at King Cove is the last established moorage for westbound fishing and recreational vessels before Dutch Harbor. The Corps of Engineers and the State of Alaska have affirmed the feasibility of a harbor expansion project in King Cove. Construction is slated to begin in 1998.

Peter Pan Seafoods dominates the fish processing industry in the town and owns and operates four facilities northeast of the boat basin entrance.

Sand Point

Sand Point, located on Popof Island in the Shumagin Islands, provides marine facilities owned by the City, Peter Pan Seafoods and Trident Seafoods. The Peter Pan and Trident facilities are on the southern end of Humboldt Harbor near the airport. Ferry landing takes place at the city dock further to the north and adjacent to the small boat harbor. The city owns and operates the city dock and the Small Boat Harbor. A study is also underway in Sand Point to determine the feasibility of a harbor expansion project. Sponsored by the City of Sand Point, the Corps of Engineers, and the State, the study's preliminary results indicate that a feasible project will indeed be identified here.

Table 4.2 Aleutians East Borough Marine Facilities and Services

FACILITY	OWNERSHIP	OPERATOR	BERTH SPACE	USE	CARGO TYPE/NOTES
SAND POINT					
Public Facilities:					
Sand Pt. City Dock	City of Sand Point	City and State	350' w/ dolphins	Cargo receipt and shipment; AMHS landing.	One acre open storage in rear.
Sm. Boat Harbor Bulkhead	City of Sand Point	Same	730'	Fishing vessel supplies.	
Sm. Boat Harbor Dock	City of Sand Point	Same	105'	Moorage of commercial and rec. craft.	
Small Boat Harbor, Flts. A-C	City of Sand Point	Same	190 vessels	Moorage of commercial and rec. craft.	Concrete floats.
Private Facilities:					
Sand Pt. Oil Docks	Trident Seafoods	Same	60'	Receipt of fuel, fishing vessel fueling.	Capacity: 15,000 barrels
Sand Pt. Seafood Dock	Trident Seafoods	Same	330' w/ dolphns	Receipt and shipment of petroleum products; vessel fueling.	
KING COVE					
Public Facilities:					
K. Cove Deep Water City Doc	AE Borough	City of King Cove	330' w/ dolphins	Cargo receipt and shipment; AMHS landing.	
Sm. Boat Harbor T-Dock	City of King Cove	Same	360'	Mooring commercial and recreational vessels; fishing vessel supply.	Steel pile concrete-decked piers for boat lift located at south side of Small Boat Harbor.
Sm. Boat Harbor Flts A-C	City of King Cove	City of King Cove	86 vessels	50 and 30 foot stalls	
Small Boat Harbor, Transient	City of King Cove	City of King Cove	100'	Fishing vessel supply.	
Private Facilities:					
King Cove Wharf	Peter Pan Seafoods	Same	70'	Container cargo, petroleum and seafood receipt; fishing vessel supply.	Capacity: 11,400 barrels
King Cove West Dock	Peter Pan Seafoods	Same	305'	Seafood receipt; fishing vessel supply.	Seafood processing plant and cannery at rear.
King Cove Center Dock	Peter Pan Seafoods	Same	305'	Seafood receipt; fishing vessel supply.	
King Cove East Dock	Peter Pan Seafoods	Same	335'	Seafood receipt; fishing vessel supply.	
COLD BAY					
Public Facilities:					
Cold Bay City Dock	AE Borough	City of Cold Bay	460' w/ dolphins	Receipt of cargo, receipt of petroleum products, AMHS ferry landing; vessel fueling.	Capacity: 90,000 barrels
AKUTAN					
Public Facilities:					
Akutan City Dock	City of Akutan	City and Western Pioneer	200' w/ dolphins	Receipt of cargo, receipt of petroleum products, AMHS ferry landing; vessel fueling.	Capacity: 1,300 barrels
Private Facilities					
Akutan Dock	Trident Seafoods	Trident Seafoods	1600'	Receipt of cargo, receipt of petroleum products, shipments of seafood; AMHS ferry landing; fishing vessel supplies.	Capacity: 40,500 barrels
FALSE PASS					
Public Facilities:					
False Pass Dock	AE Borough	City of False Pass	175' w/ dolphins	Multi-purpose facility; accommodates AMHS landings.	
Public Facilities:					
Peter Pan Wharfs (2)	Peter Pan Seafoods	Same	NA	Receipt of fish, vessel supply, multi-purpose facility.	

Source: Ogden Beeman & Associates, Inc.; U.S. Army Corps of Engineers.

ALEUTIANS WEST CENSUS AREA

The Aleutians West Census Area communities begin with Unalaska at the area's easternmost point and stretch to the south and west, encompassing the Pribilof Islands and the remainder of the Aleutian chain. Unalaska is the commercial and maritime center for this area and, as mentioned in this section's introduction, serves as a hub for cargo movements throughout Southwest Alaska.

Table 4.3 summarizes marine facilities identified in the Aleutians West Census Area. A brief summary by community is provided below.

Dutch Harbor/Unalaska

Unalaska is located on the Bering Sea coast of Unalaska Island in the Aleutian Islands, central to the Gulf of Alaska, Bristol Bay and Bering Sea fisheries. The names "Dutch Harbor" and "Unalaska" are currently used interchangeably; originally "Dutch Harbor" was the bay and "Unalaska" the town (and the island). Development on Amaknak Island became known as Dutch Harbor and development at the head of Iliuliuk Harbor, which indents the northeastern coast of Unalaska Island, became known as Unalaska. Amaknak Island was connected to Unalaska Island with a low-level highway bridge several years ago. Now there are two communities under one municipality, the City of Unalaska.

The area provides extensive support services for commercial fishing vessels including both onshore and offshore processing facilities. The island is 50 miles from the Great Circle Shipping Route (between the Far East and U.S. Pacific Northwest waters) and its ice free waters provide a haven for all kinds of domestic and foreign vessels. Unalaska is a regularly scheduled stop for both American President Line and SeaLand container ships traveling between the U.S. West Coast and the Far East. APL has its own dock at Dutch Harbor and SeaLand uses the Marine Center Wharf owned by the City of Unalaska.

Iliuliuk Channel is the only federally authorized project at Unalaska. The project was authorized in the 1930s to remove portions of Tuscarora Rock and the southern extremities of Iliuliuk Reef. This removal enabled an entrance channel into Iliuliuk Harbor measuring 350' in width and -25' depth. The cleared channel allowed larger vessels to enter Iliuliuk Harbor whereas previously they had to discharge or lighter cargo at Dutch Harbor.

Unalaska is the AMHS' westernmost port-of-call. The ferry docks at the Marine Center Wharf at Dutch Harbor.

Marine facilities are liberally located throughout the area and are described in Table 4.3. Table 4.3 begins with facilities to the north, along the spit, and extends southward through Dutch Harbor and Iliuliuk Harbor.

Atka

Atka is located on Atka Island in the Aleutian chain. The community completed construction of its first dock in 1997. The dock measures 40'x102' and is connected to shore by a 353' long trestle. The facility serves fish, general cargo, petroleum and miscellaneous other shipments and receipts.

St. George

St. George Harbor is located on Zapadni Bay on the southwest coast of St. George Island, approximately 200 miles northwest of Unalaska. The port provides fish processing capability to Bering Sea fishers. There is a barge landing on the west side of Inner Harbor and the North and South Docks are located on the east side.

Fishing vessels deliver catches to St. George facilities for processing. Generally, processed fish are barged out to Unalaska or other distribution points in container-on-barge movements or trampers.

The Tanaq Native Corporation recently completed new fish receipt/processing facilities at St. George which include two docks and a tethered mooring buoy. The Corporation is processing seafood and accommodating crab pots at the new facility.

There is a launch ramp at the northern end of Inner Harbor which is used by islanders to launch small recreational and fishing boats. There is not a small boat harbor at the harbor.

Controlling depths in St. George Harbor are approximately -18' mean lower low water (MLLW). Mean lower low water is a statistic compiled by the National Oceanographic and Atmospheric Administration that provides mariners with a tidal, a point of reference, that allows them to assess a given harbors depth at a particular point in the tidal cycle. St. George Island is not served by the AMHS.

St. Paul

St. Paul Harbor is located on the southern portion of St. Paul Island and provides fish processing and cargo facilities to this community and fishery in the Central Bering Sea and North Pacific.

There are five main docking facilities in St. Paul and a small boat harbor is planned for development in the near future (1998). The City's South Dock is used principally for container and other cargo movements. The other dock facilities are geared to fish processing.

Controlling depths in St. Paul Harbor are approximately -18'. The island is not served by the AMHS.

Table 4.3
Aleutians West Census Area Marine Facilities and Services

FACILITY	OWNERSHIP	OPERATOR	BERTH SPACE	USE	CARGO TYPE/NOTES
DUTCH HARBOR					
Public Facilities:					
Unalaska Spit Dock	City of Unalaska	Same	1900'	Mooring commercial vessels and barges.	
Ballyhoo Wharf	City of Unalaska	Petro Marine Services	1332'	Receipt of petroleum products; vessel fueling.	
Ballyhoo Dock	City of Unalaska	City, North Star, Petro Marine	1332'	Containerized and general cargo; vessel fueling.	
Marine Center Wharf	City of Unalaska	City, Sea-Land, State, Petro Marine	877' w/ dolphins	Containerized cargo; AMHS ferry terminal; vessel fueling.	
Private Facilities:					
D H Docks, Icicle Seafoods	Icicle Seafoods	Same	260'	Seafood receipt; fishing vessel supplies.	Seafood processing vessel Arctic Star moored.
D H Wharf	Western Pioneer	West. Pioneer et.al.	450'	Fishing vessel supply; fueling	
D H Resoff Wharf	Western Pioneer	Petro Marine Services	275'	Receipt of petroleum products; vessel fueling.	
DH Wharf	Alaska Ship Supply	Alaska Ship Supply, Petro Marine	612'	Cargo shipments; fishing vessel supplies; vessel fueling.	General cargo; fueling; fishing supplies.
DH Dock, Magone Marine	Magone Marine Service, Inc.	Same	600'	Steel worked barges, permanent moorage.	Vessel repair.
DH Terminal Wharf	Delta Western	Delta Western	609'	Receipt/shipment of petroleum products; vessel fueling.	w/ shore moorings.
DH Wharf, APL	Dutch Harbor Dvpmt. Corp.	Amer. President Lines/Delta Western	1050' w/ dolphins	Cargo shipments; vessel fueling.	Container and general cargo.
ILIULIUK HARBOR					
Public Facilities:					
Unalaska Small Boat Harbor	City of Unalaska	Same		Commercial vessel moorage.	Illiuliuk: Float C, 4-40x3' finger piers; 45' stalls.
Unalaska Small Boat Harbor	City of Unalaska	Same		Commercial vessel moorage.	Illiuliuk: Floats A&B, 3-62x5' finger piers; 3-40x4' finger piers.
Private Facilities:					
DH Dock	Queen Fisheries	East Pt. Seafood	420'	Seafood receipt; fishing vessel supplies.	Seafood processing at rear.
DH Dock	Tribe-Ounalashka Corp.	Royal Aleutian Seafoods	300'	Seafood receipt; fishing vessel supplies.	Seafood processing located on vessel.
DH Vita Dock	Unisea, Inc.	Same	220'	Seafood receipt; fishing vessel supplies.	Seafood processing at rear.
DH West Wharf	Unisea, Inc.	Same	600'	Seafood receipt; fishing vessel supplies.	Seafood processing at rear.
DH South Wharf	Unisea, Inc.	Same	700'	Seafood receipt; fishing vessel supplies.	Seafood processing at rear.
DH East Wharf	Unisea, Inc.	Same	350'	Seafood receipt; fishing vessel supplies.	Seafood processing at rear.
DH Galaxy Dock	Unisea, Inc.	Same	175'	Seafood receipt; fishing vessel supplies.	Storage warehouse at rear.
DH Pier, Walashek	Walashek Ship Repair Yard	Same	190'	Mooring vessels for repair.	Marine repair plant/South side 1-600-ton marine railway.
Alyeska Seafoods	Alyeska Seafoods, Inc.	Same	1060'	Seafood receipt; fishing vessel supplies.	280' face/130' souther side.Seafood processing at rear.
Unalaska Dock Westward Seafood	Westward Seafoods	Same & Petro Marine	650'	Seafood receipt; fishing vessel supplies; vessel fueling.	East shore, Captains Bay.
Capt.'s Bay Terminal	Crowley Marine	Same	577'	Cargo, fishing vessel supplies, vessel fueling.	Cargos include petrol, containers, seafood receipt.
Unalaska North Dock	Offshore Systems	Same	120'	Seafood receipt; fishing vessel supplies; vessel fueling.	
Unalaska Main Dock	Offshore Systems	Same	600'	Cargo/seafood receipt, fishing vessel supplies, fueling.	Storage: 5 warehouses, 7 acres at rear
Unalaska 450 Dock	Offshore Systems	Same	480'	Seafood receipt; fishing vessel supplies; fueling.	
Unalaska South Dock	Offshore Systems	Same	110'	Seafood/petrol rcpt; fishing vessel supplies; fueling.	
Unalaska Crab Pot Docks	Offshore Systems	Same	100'	Fishing vessel supplies.	9 acres open storage at rear.
ATKA					
Public Facilities:					
Atka Dock	City of Atka	Same	102'x40'	Cargo and petroleum receipt; multi-purpose facility	353' approach trestle. New; completed October 1997.
ST PAUL					
Public Facilities:					
City North Dock	City of St. Paul	Same	180'	Barge shipments, commercial vessel tie-up.	Seafood processing at rear.
City South Dock	City of St. Paul	Same	200'	Container and other cargo vessels.	
Private Facilities:					
Icicle	Icicle Seafoods	Same			
TDX Dock	Corporation	Same	300'		
Unisea	Unisea, Inc.	Same		Fish receipt; fish vessel icing.	

Source: Ogden Beeman & Associates, Inc.; U.S. Army Corps of Engineers; port interviews.

DILLINGHAM CENSUS AREA

The Dillingham census area encompasses mainland communities bordering Bristol Bay to the south. The city of Dillingham is the largest community in the area and contains the greatest number of port and harbor facilities. Other cargo facilities were identified at Aleknagik and Clarks Point.

Dillingham area is not served by the AMHS.

Marine facilities for the Dillingham Census Area are summarized in Table 4.4.

Dillingham

Dillingham is located on the Nushagak River in southwest Alaska and provides harbor and support services to Bristol Bay fishing vessels. There is a federally authorized navigation project which provides for a small boat basin (+5 acres) with -2' depth along Scandinavian Creek on the western edge of town. An embankment is provided on three sides of the basin to provide protection from the strong winds that are characteristic to Dillingham. Dillingham ices up during the winter and is generally unavailable from early November through early May.

Aleknagik

Aleknagik is located upstream from Dillingham on the Nushagak River. There is a state operated dock at the town which provides a facility for receipt and shipment of general cargo, fuels and fishing vessel supplies. The dock is accompanied by a launch ramp.

Clarks Point

Clarks Point is a town of approximately 65 people located on Nushagak Harbor. It houses a floating fish processing plant during the summer fishing season and most of the town's economic activity is fishing related. The Alaska Packers Association has a wharf at Clarks Point which accommodates the fish processor and general cargo deliveries. Freight is usually shipped to Dillingham, lightened and forwarded to Clarks Point.

Table 4.4
Dillingham Census Area Marine Facilities and Services

FACILITY	OWNERSHIP	OPERATOR	BERTH SPACE	USE	CARGO TYPE/NOTES
DILLINGHAM					
Public Facilities:					
Small Boat Harbor Floats	City of Dillingham	Same		Moorage for commercial vessels and recreational craft.	Berthing space for 320 vessels; 2 small boat launching ramps.
Small Boat Harbor Dock	City of Dillingham	Same	94	Fishing vessel supplies.	
Seafood Dock	City of Dillingham	Peter Pan	180	Seafood receipt, fishing vessel supply.	
Cargo Dock	City of Dillingham	Same	208	Cargo receipt and shipment.	Containerized and general cargos; seafood shipments.
Private Facilities:					
Dillingham Wharf	Peter Pan Seafood	Same	300	Seafood receipt, fishing vessel supply.	Seafood processing plant in rear.
Dillingham Terminal Wharf	Delta Western	Same	100+280	Receipt and shipment of petroleum products; vessel fueling.	Total capacity: 52,500 barrels.
Wood River Dock	Dragnet Fisheries	Same	60	Seafood and petroleum receipt; fishing vessel supplies.	Seafood processing in rear.
ALEKNAGIK					
Public Facilities:					
Aleknagik Dock	State of Alaska	Same	100'x20'	General cargo receipt and shipment; seafood and petroleum shipments.	80' wing breakwater protects harbor and launch ramp.
CLARK'S POINT					
Private Facilities					
Alaska Packer's Assoc. Wharf	Alaska Packer's Assoc.	NA	50'	Seafood receipt, fishing vessel supply, general cargo.	

Source: Ogden Beeman & Associates, Inc.; U.S. Army Corps of Engineers; Alaska DOT&PF.

BRISTOL BAY BOROUGH

The Bristol Bay Borough planning area consists of communities around Kvichak Bay in the northeastern portions of Bristol Bay. There is a federally authorized navigation project at the Naknek River, the primary purpose of which is to remove boulders in the river that obstruct navigation. The AMHS does not serve the area.

Communities identified as having marine facilities in this planning area include Naknek, South Naknek and King Salmon. All of these communities depend on the fishing industry for their main economic activity.

Bristol Bay marine facilities are summarized in Table 4.5 and discussed briefly by community below.

Naknek

Marine facilities in Naknek are predominantly private docks attendant to fish processing plants. There is one public facility, Fisherman's Dock, which serves as a public boat launch and tie-up, and receives and discharges general cargo from barges during the summer months.

The community has identified the need for a small harbor to help address harbor congestion during fishing season. Approximately 500 fishing vessels use Naknek during the summer and fall months. Their interaction with freight and fishing barges and the lack of a refuge during storms cause a hazardous environment for marine traffic.

South Naknek

South Naknek is located on the south bank of the Naknek River directly across from the town of Naknek. The Bristol Bay Borough built a cargo dock at South Naknek which receives cargo and facilitates the shipment of seafood.

No small boat harbors were identified at either Naknek or South Naknek.

Table 4.5
Bristol Bay Borough Marine Facilities and Services

FACILITY	OWNERSHIP	OPERATOR	BERTH SPACE	USE	CARGO TYPE/NOTES
Naknek					
Public Facilities:					
Fisherman's Dock	Bristol Bay Borough	Same	200'	Fishing vessel supply, icing and moorage.	
Naknek Cargo Dock	Bristol Bay Borough	Same	600'	Receipt & shipment of cargo; shipment of seafood.	
Private Facilities:					
Peter Pan Seafoods	Peter Pan Seafoods	Same	400'	Seafood receipt; fishing supplies.	Seafood processing plant in rear.
Inlet Salmon - right bank	Inlet Salmon	Same	225'	Seafood receipt; fishing supplies.	Seafood processing plant in rear.
Naknek Terminal Wharf	Delta Western	Same	150'	Petroleum receipt/shipment; fueling.	Capacity: 35,700 barrels
Naknek Dock - right	Trident Seafoods	Same	600'	Seafood receipt; fishing supplies.	Seafood processing plant in rear.
King Crab	King Crab	Same	230'	Seafood receipt; fishing supplies.	Seafood processing plant in rear.
Nelbro Packing	Nelbro Packing Co.	Same	800'	Seafood receipt; fishing supplies.	Seafood processing plant in rear.
Red Salmon Co.	Wards Cove Packing Co.	Red Salmon Co.	800'	Seafood receipt; fishing supplies.	Seafood processing plant in rear.
SOUTH NAKNEK					
Public Facilities:					
South Naknek Cargo Dock	Bristol Bay Borough	Same	200'	General and containerized cargo; seafood shipment.	
KING SALMON					
Public Facilities					
USF&W Dock-Left Bank	U.S. Government	Same	60'	Mooring small vessels, float plane landings.	
USF&W Dock-Right Bank	State of Alaska	Same	60'x2	Mooring small vessels, float plane landings.	State Game office in rear.
Park Service Dock	U.S. Government	Same	130'	Mooring small vessels, float plane landings.	US Dept. Interior, Nat'l Park Service, and various park facilities in rear.

Source: Ogden Beeman & Associates, Inc.; U.S. Army Corps of Engineers; Alaska DOT&PF.

LAKE AND PENINSULA BOROUGH

Miscellaneous marine facilities serve the small communities of the Lake and Peninsula Borough, located at the northern end of the Alaskan Peninsula. Egegik, Chignik, Ugashik, Pilot Point, Iliamna and Levelock were identified as having piers and wharves. There is a federally authorized navigation project at the Egegik River, primarily for the removal of boulders in the river that obstruct navigation. These facilities are summarized in Table 4.6.

Egegik

Fishing is the primary industry in Egegik, located on the western shore of the peninsula. During the season approximately 30 floating processors participate in the fishery. A total of six on-shore processors were identified in the 1997 Corps of Engineers Reconnaissance report and two cannery wharves and a pier serve those facilities. Egegik has an 80'x40' public dock that extends from the shore on a 284' trestle. Barges shipping freight lightered from Dillingham or other places encounter a severe "list" during low tide periods in Egegik River. This listing has been attributed to a 6' submerged ledge.

Chignik

Chignik has wharves and piers that serve the fish processing industry that predominates the town's economy. The AMHS uses these private docks for its landings at Chignik during its summer schedule. Chignik is in the process of developing a 100-slip small boat harbor. Permitting is underway for a new public dock (1998).

Levelock

The community of Levelock was identified as having a dock although details about its specifications and ownership were not available. The channels surrounding Levelock are hazardous and require experienced pilotage.

Table 4.6
Lake and Peninsula Borough Marine Facilities and Services

FACILITY	OWNERSHIP	OPERATOR	BERTH SPACE	USE	CARGO TYPE/NOTES
Egegik					
Public Facilities:					
Egegik Public Dock	City of Egegik	Same	80'x40'	Multi-purpose facility; fish receipt; fuel receipt.	Listing affects barges making deliveries to the area during low tides.
Private Facilities:					
Cannery wharves (2) and pier	N/A	N/A	N/A	Fish processing support.	
Chignik					
Private Facilities:					
Aleutian Dragon Cannery	N/A	N/A	N/A	Fish processing; general cargo; AMHS landing.	AMHS switches to the othe facility if it has a vehicle taller than 10'.
Chignik Pride Dock	N/A	N/A	N/A	Receipt & shipment of cargo; shipment of seafood.	
Levelock				Multi-purpose facility.	

Source: Ogden Beeman & Associates, Inc.; U.S. Army Corps of Engineers; Alaska DOT&PF.

Alaska Marine Highway System

State-sponsored marine transportation services were originally established in Southwest and Southeast Alaska to provide passenger, freight, and vehicle transportation services for Alaskan communities where highway facilities on land were not feasible. Alaska's Division of Marine Transportation operated service to Southwest communities via the *M/V Tustumena*, beginning in 1964. Since that time, the routing of this vessel was coordinated with expanded services to the Southcentral (Prince William Sound) area via the *M/V Bartlett* (in 1970) and the *M/V Tustumena* was lengthened and refurbished.

In 1983 administration of these services was consolidated into a division within the DOT&PF and renamed the Alaska Marine Highway System (AMHS). Some marine routes have been recognized as an intermodal component of the National Highway System connecting the study area to Alaska's continental roadway system via the ports of Homer, Seward, or Valdez.

"The mission of the Alaska Marine Highway System (AMHS) is to serve Alaskan communities by providing passenger, freight (van) and vehicle transportation among communities where development of a land highway system that would meet the social, educational, health, and economic needs of Alaskans is not feasible…The system connects communities with each other, with regional centers, and with the continental road system. It is an integral part of Alaska's highway system, reaching many communities which would otherwise be effectively cut off from the rest of the state. The AMHS is designed to provide basic transportation services to these communities – transportation that allows community access to health services, commodities, legal services, government services, and social services; transportation that meets the social needs of isolated communities, and transportation provides a base for economic development." [8] AMHS traffic and service fluctuations are highly seasonal, however the system can be used for the shipment of freight and goods via container vans. In the Southwest Alaska service area for example, freight consists primarily of bulky items that are difficult to ship by air, and on certain routes some time-sensitive goods.

EXISTING SERVICE

Today, at approximately 900 miles in length, the *M/V Tustumena* route from Homer to Unalaska is the second longest operated by AMHS. This vessel was originally put into service to provide a year-round connection between the Kenai Peninsula and Kodiak Island. Since that time, it has also provided supplementary service to communities in the Prince William Sound/Copper River Area. In 1975, Sand Point and King Cove became the first of today's seven Aleutian chain ports to be incrementally added to the route. The route is constrained by severe winter weather conditions along the Aleutian chain. Regular Aleutian chain service is suspended during the fall and winter months, during which time the Southwest Alaska communities of Kodiak and Port Lions continue to receive service to the Kenai Peninsula.

Existing Routing

Table 4.8 identifies the standard AMHS ports-of-call and season of service, by route passing through the study area. Today, there are only two routes:

1. Southwest/Aleutian Chain
2. Southcentral/Prince William Sound

These AMHS routes directly connect communities in Southwest Alaska to the continental highway system at the ports of Valdez, Homer, and Seward. Kodiak Island communities

[8] Source: Alaska Marine Highway System, "Annual Traffic Volume Report," p. 1, March 1996.

receive substantially more frequent service than the rest of the Southwest Alaska study area. In particular, the AMHS provides weekly service to Kodiak and Port Lions except when the *M/V Tustumena* is: (1) out of service in the spring, (2) on the week-long Aleutian Chain trip in the spring/summer months, or (3) in the fall/winter when *M/V Bartlett* is out of service and the *M/V Tustumena* serves Valdez and Cordova (in Southcentral Alaska). Aleutian Chain ports-of-call are served six times a year on average (i.e., about once a month throughout the navigable summer season).

More specifically, the Southwest/Aleutian Chain route served the following typical series of ports during 1996 (in approximate annual order, beginning with January):

- Seldovia–Homer–Port Lions–Kodiak–Seward–Chenega Bay via a 4-day round-trip, followed by a one-way leg ending in Seward on May 1. Annual maintenance on the *M/V Tustumena* is usually performed between early March and mid-April, which interrupts service.
- Seldovia–Homer–Kodiak–Chignik–Sand Point–King Cove–Cold Bay–False Pass–Unalaska in about three and a half days, and then returns via Akutan (instead of False Pass) in three days. A round-trip service run on average, six times between mid-April and mid-September, but eight times in 1996 (twice in September).
- Seldovia–Homer–Port Lions–Kodiak–Seward, and back in three days, an uneven number of times in-between Aleutian chain trips. Usually, the last round-trip to Kodiak preceding the next Aleutian chain trip does not include Seward, but it does include an additional Seldovia–Homer round-trip.

Table 4.7 shows the approximate running times and distances between ports.

Table 4.7
Running Times and Distances

From	To	Running Time	Nautical Miles	Statute Miles
Seldovia	Homer	1hr., 30 min.	17	19
Homer	Kodiak	9 hrs., 30 min.	136	155
Kodiak	Chignik	18 hrs., 30 min.	249	283
Chignik	Sand Point	9 hrs., 15 min.	138	157
Sand Point	King Cove	6 hrs., 30 min.	98	111
King Cove	Cold Bay	2 hours	25	28
Cold Bay	False Pass	4 hrs., 15 min.	58	66
False Pass	Akutan	10 hrs., 30 min.	134	152
Akutan	Unalaska	3 hrs., 30 min.	45	51

Source: http://www.dot.state.ak.us/external/amhs/vessels/runtime.html

The *M/V Tustumena* is allocated to this Southwest/Aleutian Chain route during the summer and to the Southcentral/Prince William Sound route for the remainder of the year (except for its overhaul period). The Southcentral route typically connects Kodiak Island communities to the Kenai Peninsula and Prince William Sound ports during the winter (i.e., October through February) and in April just before beginning Aleutian chain service in the summer months. Homer is the standard endpoint.

Table 4.8
M/V Tustumena Ports-of-Call, Frequency, and Season of Service by Route

ROUTE PORT-OF-CALL	SPRING (Mar-May)	SUMMER (Jun-Aug)	FALL (Sep-Nov)	WINTER (Dec-Feb)
Southwest/Aleutian Chain				
Seldovia	*2*	*3*	*3*	
Homer	*2*	*3*	*3*	
Kodiak	*2*	*3*	*3*	
Chignik	*2*	*3*	*3*	
Sand Point	*2*	*3*	*3*	
King Cove	*2*	*3*	*3*	
Cold Bay	*2*	*3*	*3*	
False Pass	*2**	*3**	*3**	
Unalaska	*2*	*3*	*3*	
Akutan	*2**	*3**	*3**	
Southcentral/Prince William Sound				
Seldovia	*8*	*20*	*13*	*8*
Homer	*11*	*30*	*16*	*8*
Port Lions	*4*	*10*	*10*	*7*
Kodiak	*13*	*32*	*14*	*8*
Seward	*5*	*10*	*10*	*9*
Chenega Bay (whistle stop service)	*1***		*2***	*3***
Cordova			*15*	*29*
Tatitlek (whistle stop service)			*4***	*6***
Valdez			*15*	*29*

KEY: (blank) *Served ≥ twice a month. Other ports served monthly.* | # *No. of round-trips / 3mo. period.*
* *Inbound or outbound service only.* | ** *On-demand service only.*

Source: Fall/Winter 1995-96, Summer 1996, and Fall/Winter 1996-97 Alaska Marine Highway Schedules.

The Alaska Marine Highway System's mission also includes providing special event services to communities in the study area. In fact, AMHS does occasionally provide special event cruise services and coordinated mainland connections to rail or bus services. In recent years, these have included Alaska railroad ticketing on connecting runs between Portage and Whittier, as well as one-time cooperative agreements/ticketing on private bus operations from Valdez to Anchorage or Seward to Anchorage. The *M/V Tustumena* has also served the cities of Yakutat, Juneau, and Ketchikan en route to the port where its annual maintenance/overhaul is provided. Revenue passengers and freight have been carried whenever possible. Lastly, it is notable that the AMHS has not served the Port of Anchorage since the *M/V Tustumena*'s original routing began in 1965 and continued to the early 1970's.

Figure 3 identifies both existing *M/V Tustumena* routes within the study area.

Figure 3 AMHS Routes

Existing Fares

AMHS adult passenger fares range from $16 for an Akutan–Unalaska trip to $292 for Valdez–Unalaska and child passenger fares from $9 to $146 for the same one-way trip city-pairs. Tables 4.9 and 4.10 list current 1997 passenger fares for each city-pair in the study area. Table 4.11 shows that the average one-way passenger fare ranges from $15 to $263, again between the same two city-pairs.

Vehicle fares are determined by the overall length and width of the vehicle, beginning at ten feet long or less. The maximum allowable length on the Southwest system is 40 feet including container vans used for shipping freight. On average, standard vehicles are about 19 feet long by 8 feet wide. The fare rate per additional foot in length is not linear. For example, 19-foot vehicle fares range from $35 for a Homer–Seldovia trip to $830 for Valdez–Unalaska, while the typical 36-foot container van fares range from $103 to $2,523 for the same two trips. Tables 4.12 and 4.13 list current 1997 standard vehicle and van fares for each city-pair in the study area.

Table 4.9
1997 Adult Fares (dollars)

	Unalaska	Akutan	FalsePass	ColdBay	KingCove	SandPoint	Chignik	Kodiak	PortLions	Seldovia	Homer	Seward
Akutan	16											
FalsePass	46	34										
ColdBay	62	50	18									
KingCove	74	66	34	18								
SandPoint	98	90	58	42	32							
Chignik	132	124	92	76	66	42						
Kodiak	202	194	162	146	136	112	76					
PortLions	202	194	162	146	136	112	76	20				
Seldovia	246	240	208	192	180	156	122	52	52			
Homer	242	236	204	188	176	152	118	48	48	18		
Seward	250	242	210	194	184	160	124	54	54	100	96	
Valdez	292	286	254	238	226	202	168	98	98	142	138	58

Source: http://www.dot.state.ak.us:80/external/amhs/tariffs

Table 4.10
1997 Child Fares (dollars)

	Unalaska	Akutan	FalsePass	ColdBay	KingCove	SandPoint	Chignik	Kodiak	PortLions	Seldovia	Homer	Seward
Akutan	9											
FalsePass	24	18										
ColdBay	32	26	10									
KingCove	38	34	18	10								
SandPoint	50	46	30	22	16							
Chignik	66	62	46	38	34	22						
Kodiak	102	98	82	74	68	56	38					
PortLions	102	98	82	74	68	56	38	10				
Seldovia	124	120	104	96	90	78	62	26	26			
Homer	122	118	102	94	88	76	60	24	24	10		
Seward	126	122	106	98	92	80	96	28	28	50	48	
Valdez	146	144	128	120	114	102	84	50	50	70	70	30

Source: http://www.dot.state.ak.us:80/external/amhs/tariffs

Table 4.11
Average Passenger Fare Collected Per City-Pair* (dollars)

	Unalaska	Akutan	FalsePass	ColdBay	KingCove	SandPoint	Chignik	Kodiak	PortLions	Seldovia	Homer	Seward
Akutan	15											
FalsePass	42	31										
ColdBay	56	45	16									
KingCove	67	60	31	16								
SandPoint	88	81	52	38	29							
Chignik	119	112	83	68	60	38						
Kodiak	182	175	146	132	122	101	68					
PortLions	182	175	146	132	122	101	68	18				
Seldovia	222	216	187	173	162	140	110	47	47			
Homer	218	212	184	169	158	137	106	43	43	16		
Seward	225	218	189	175	166	144	118	49	49	90	86	
Valdez	263	258	229	214	204	182	151	88	88	128	124	52

**Based on AMHS passenger type distributions in Southeast Alaska (80% adults systemwide).*

Source: http://www.dot.state.ak.us:80/external/amhs/tariffs

Table 4.12
1997 Standard Vehicle Fares* (dollars)

	Unalaska	Akutan	FalsePass	ColdBay	KingCove	SandPoint	Chignik	Kodiak	PortLions	Seldovia	Homer	Seward
Akutan	**											
FalsePass	123	**										
ColdBay	169	**	46									
KingCove	200	**	87	41								
SandPoint	269	**	156	110	80							
Chignik	370	**	257	211	180	110						
Kodiak	571	**	458	412	381	312	211					
PortLions	571	**	458	412	381	312	211	46				
Seldovia	699	**	586	540	509	439	339	138	138			
Homer	687	**	574	528	497	428	327	126	126	35		
Seward	706	**	594	548	517	447	347	145	145	277	265	
Valdez	830	**	718	672	641	571	470	269	269	401	389	134

**Fares listed for the average (SW/SC systemwide) vehicle length of 19' - not including driver.*
Passenger sedans, pickups, vans, RV's, trucks and construction vehicles included in average.
***There are no vehicle loading facilities at Akutan.*

Sources: http://www.dot.state.ak.us:80/external/amhs/tariffs
AMHS Fast Passenger Vehicle Ferry Optimization Study (1995)
& AMHS database

Table 4.13
1997 Standard Container-Van Fares* (dollars)

	Unalaska	Akutan	FalsePass	ColdBay	KingCove	SandPoint	Chignik	Kodiak	PortLions	Seldovia	Homer	Seward
Akutan	**											
FalsePass	373	**										
ColdBay	510	**	137									
KingCove	604	**	258	121								
SandPoint	815	**	470	333	239							
Chignik	1122	**	777	639	545	333						
Kodiak	1733	**	1389	1252	1157	945	639					
PortLions	1733	**	1389	1252	1157	945	639	137				
Seldovia	2122	**	1777	1639	1545	1334	1027	416	416			
Homer	2087	**	1742	1605	1510	1298	993	380	380	103		
Seward	2146	**	1800	1663	1569	1358	1051	438	438	839	804	
Valdez	2523	**	2177	2040	1946	1733	1428	815	815	1216	1180	392

**Fares listed for the average (SW/SC systemwide) van length of 36'*
***There are no vehicle loading facilities at Akutan.*

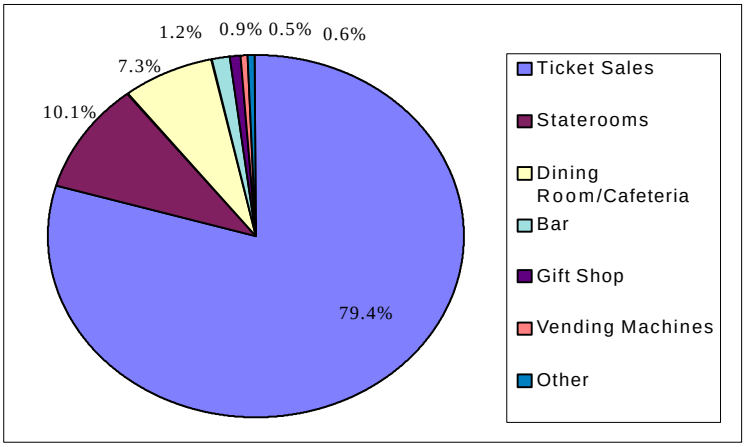
Sources: http://www.dot.state.ak.us:80/external/amhs/tariffs
& AMHS database

Existing Revenues

Ticket sales generate a significant majority of AMHS annual revenues. Other income-generating activities on board AMHS vessels include: stateroom, dining room/cafeteria, bar, gift shop, and vending machine sales, advertising, facility use and rental fees, and video game commissions. Exhibit 4.1 shows the system-wide breakdown by type of revenue for FY1996.

In Southwest Alaska only one vessel is pertinent to AMHS operations, and therefore the total revenue outlook within the study area: the *M/V Tustumena*. Exhibit 4.2 describes the relative magnitude of FY1990-FY1996 revenues generated by the *M/V Tustumena* as a proportion of total system-wide revenue. The percentage has remained fairly flat over time, as would be expected for a route where the frequency of service has not changed much over time.

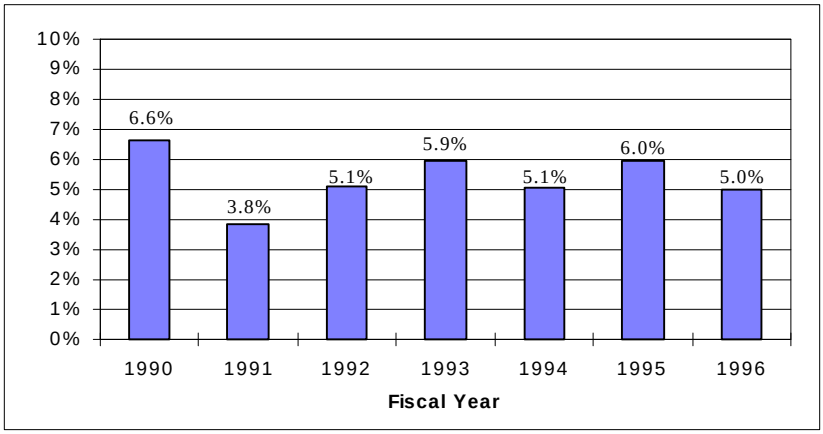
Exhibit 4.1
FY1996 Alaska Marine Highway System Fund Revenues*



** Note that restricted revenues are not deposited in the Fund. This figure describes the relative proportions of income by other sources.*

Source: AMHS

Exhibit 4.2
System Revenue Attributed to *M/V Tustumena* Operations in Southwest Alaska*



** Based on reservations and ticketing information, not accounting figures. Other non-specific revenues were collected by AMHS in FY92, FY95, and FY96.*

Source: AMHS

Existing Operating Costs

On-board personnel services make up a significant majority of AMHS operating costs. Fuel, supplies, contractual services, and travel costs are the other types of expenditures incurred by AMHS. Costs of each type are attributed to deck, engineering and passenger operations, overhaul, or vessel lay-up categories. Expenditures can also be further apportioned among shoreside or vessel operations, administration, reservations, marketing, and other overhead. Capital expenditures are authorized separately and charged to the project budget. Exhibit 4.3 shows the system-wide breakdown by expenditure category for FY1996.

Only one AMHS vessel serves communities in the Southwest Alaska study area, the *M/V Tustumena*. *M/V Tustumena* operations are less costly (per week in service) than are AMHS operations for the larger vessels serving Southeast Alaska communities. For FY1996, total weekly operating costs for the 25.3 weeks of *M/V Tustumena* service were $4.1 million, or about $161,600 a week. However, it is important to note that gross AMHS expenditures consistently exceed *M/V Tustumena* revenues in the study area. For example, average weekly revenues for FY1996 were only about $76,200.

Table 4.14 describes these relative magnitudes of vessel revenue to expenditure while Exhibit 4.4 describes the expenditures history in proportion to total system-wide expenditures.

Exhibit 4.3
FY1996 Alaska Marine Highway System Fund Expenditures

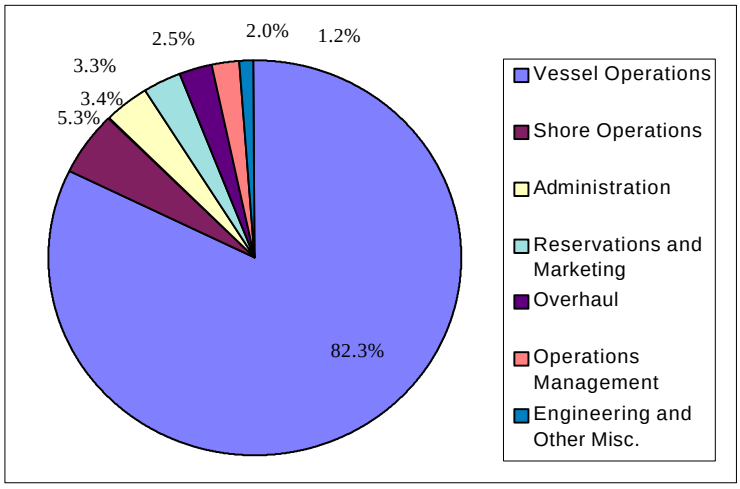
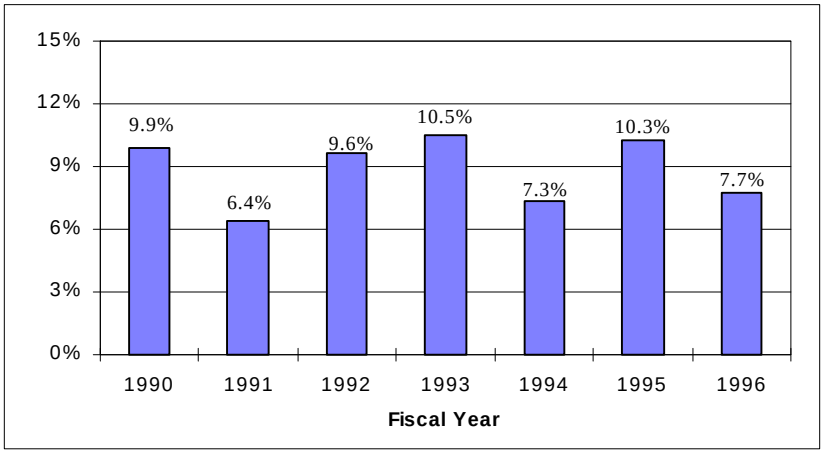


Table 4.14
Relative *M/V Tustumena* Revenues and Expenditures

	FY 90	FY 91	FY 92	FY 93	FY 94	FY 95	FY 96
M/V Tustemena							
Revenues	$2,392	$1,634	$2,185	$2,421	$2,040	$2,521	$1,940
Percent of Total	6.6%	3.8%	5.1%	5.9%	5.1%	6.0%	5.0%
Expenditures	$5,239	$3,595	$5,010	$5,620	$3,690	$5,501	$4,060
Percent of Total	9.9%	6.4%	9.6%	10.5%	7.3%	10.3%	7.7%
M/V Tustemena Ratio	0.46	0.45	0.44	0.43	0.55	0.46	0.48
Systemwide Total							
Revenues	$36,122	$42,561	$42,838	$40,879	$40,373	$42,231	$38,656
Expenditures	$53,119	$56,225	$52,120	$53,640	$50,310	$53,559	$52,503
Systemwide Ratio	0.68	0.76	0.82	0.76	0.80	0.79	0.74

** Dollar amounts in thousands. System-wide ratio is revenues: expenditures.*
Source: AMHS.

Exhibit 4.4
System Expenditures Generated from *M/V Tustumena* Operations in Southwest Alaska*



** Shared overhead and administrative costs (with* M/V Bartlett *operations in the Prince William Sound) are not included.*
Source: AMHS.

Existing Fleet Characteristics

The Alaska Marine Highway System currently operates eight vessels and has one new vessel, the *M/V Kennicott*, under construction in Mississippi. The *M/V Kennicott* is scheduled to be delivered in May 1998 and to enter service in June 1998. The principal characteristics of the existing fleet and the *M/V Kennicott* are provided in Table 4.15.

Table 4.15
Current AMHS Fleet Characteristics

Ship Name	Year	LOA	Beam	BHP	Passengers	Vehicles	Vans	SOLAS
Columbia	**1974**	**418**	**85**	**12,350**	**625**	**118**	**16**	
Malaspina	**1963**	**408**	**74**	**8,000**	**500**	**78**	**18**	
Matanuska	**1963**	**408**	**74**	**7,242**	**500**	**78**	**18**	**Yes**
Taku	**1963**	**352**	**74**	**8,000**	**450**	**61**	**11**	**Yes**
Aurora	**1977**	**235**	**57**	**4,300**	**250**	**30**	**10**	**Yes**
Le Conte	**1974**	**235**	**57**	**4,300**	**250**	**30**	**13**	**Yes**
Tustumena	**1964**	**296**	**61**	**5,000**	**210**	**32**	**24**	
Bartlett	**1969**	**193**	**53**	**3,468**	**190**	**26**	**10**	
Kennicott	**1998**	**382**	**85**	**13,195**	**500**	**89***	**20***	**Yes**

Sources: Alaska Marine Highway System, Andy Hughes, personal communication, February 2, 1998.
LOA refers to Length Overall. BHP refers to Brake Horsepower (1 HP=550 ft-lb./sec). SOLAS refers to whether or not the ship complies with the International Convention on Safety of Life at Sea.
** Vehicle capacity for the* M/V Kennicott *applies when operating in the Southwest Alaska route system where the vehicle elevator and turntable are used; when used in the Southeast Alaska route system, larger vehicle capacities may be achieved.*

Passenger and vehicle capacities indicated in Table 4.15 refer to the current AMHS booking limit. Vehicle capacities refer to standard passenger cars. Vans refer to standard 24 foot (box size) trailer units, except in the case of the *M/V Kennicott* where the standard van refers to a 40 foot (box size) trailer unit.

Only two vessels in the AMHS fleet are certified by the U.S. Coast Guard for ocean service and are therefore capable of providing service to the Southwest region. These are the existing *M/V Tustumena* and the new *M/V Kennicott*. Throughout her career the *M/V Tustumena* has been dedicated to serving Prince William Sound and the Southwest region. The *M/V Kennicott* was conceived as a multi-mission vessel, with the following capabilities:

- The capability to serve the Southeast mainline, connecting to southern terminuses at either Prince Rupert or Bellingham.
- The capability to serve the Prince William Sound and Southwest route systems currently served by the *M/V Tustumena*, specifically: Cordova, Valdez, Seward, Homer, Kodiak, King Cove, Sand Point, Cold Bay, Unalaska (Dutch Harbor), and Yakutat.
- The capability to provide trans-Gulf (i.e., Gulf of Alaska) service connecting Prince William Sound/Southwest regions with the Southeast region.
- The capability to serve as a floating communications, command and logistics center during a natural or man made state emergency such as an crude oil spill or earthquake.

Because of these diverse capabilities the *M/V Kennicott* is not expected to be dedicated to the Prince William Sound or Southwest regions, but is expected to serve these regions during periods when the *M/V Tustumena* is out of service for annual maintenance. The Prince William Sound and Southwest regions will also benefit from the more frequent trans-Gulf service which the *M/V Kennicott* is expected to provide.

Over the next decade no major refurbishments are anticipated for either of the two AMHS vessels capable of serving the Southwest region. As a new vessel the *M/V Kennicott* would not be expected to undergo any major refurbishment for at least 15, and more likely 20, years. The 1990-1991 AMHS Fleet Condition and Asbestos Survey identified a model for major AMHS vessel refurbishments consisting of major hotel refurbishments at 20 and 40 years vessel age, and a mid-life re-power at 30 years vessel age. As may be seen from Table 4.16, the *M/V Tustumena* has experienced a major hotel refurbishment within the last ten years, and recently underwent her mid-life re-power.

Table 4.16
Major Refurbishment History (by Systems) of Existing AMHS Fleet

Ship Name	Repower	SSDGs	Hotel	Galley	Lifeboats & Davits	Rescue Boats	MES	Fire Safety	MSD	Elevators
Columbia	(future)	1992	–	–	–	–	–	–	1990	–
Malaspina	–	1990	1972, 1992	1992	–	–	–	–	1989	–
Matanuska	1985	1985	1978	1996	(1998)	–	–	(1997)	1988	–
Taku	1992	–	1981	–	1996	–	–	1996	1981	–
Tustumena	1996	1994	1969, 1991	1991	1988	1988	1996	1996	1991	1991
Le Conte	(future)	–	–	1987	1995	1995	1995	(1997)	1989	1995
Aurora	(future)	–	–	–	1994	1994	1994	1996	1988	1994
Bartlett	–	1991	–	–	–	–	–	–	1985	–

Source: Bruce L. Hutchison. SSDGs refer to Ship Service Diesel Generators. MES refers to Marine Escape System. MSD refers to Marine Sanitation Devices.

One notable trend is the large amount of refurbishment that has been required over the past decade in response to new regulations. Many new regulations imposed by the International Maritime Organization (IMO) have been imposed retroactively onto existing vessels, subject to a phased in compliance schedule. It is impossible to predict whether the rate of promulgation of new regulations will continue into the future at the pace recently experienced. However, as a non-SOLAS[9] vessel the *M/V Tustumena* is less vulnerable to new regulations than are the five SOLAS vessels in the AMHS fleet (see the last column of Table 4.15). Many new regulations promulgated by IMO do eventually make their way into U.S. Coast Guard regulations for domestic vessels, but the domestic regulations typically lag the international regulations by anywhere from three to ten years.

The *M/V Kennicott* is a SOLAS vessel, and has been built to all current U.S. Coast Guard and SOLAS standards. In response to the tragic 1994 capsize and sinking of the Baltic ferry *Estonia*, the *M/V Kennicott* has also been designed to meet certain higher damaged stability standards that exceed existing SOLAS and/or U.S. Coast Guard rules.

[9] SOLAS stands for Safety of Life at Sea, and it dates to the International Convention for the Safety of Life at Sea, which was formed after the 1914 sinking of the *H.M.S. Titanic*.

PASSENGER DEMAND AND RIDERSHIP

AMHS service in Southwest Alaska is defined by its seasonality and frequency. Ports on Kodiak Island receive year-round and weekly service while distance and severe weather conditions have limited Aleutian chain service to a round-trip six or seven times a year. Ferry ridership naturally reflects this difference in level of service. A difference that, furthermore, constrains the demand analysis to existing conditions.

Exhibits 4.5 and 4.6 describe annual system embarkings and disembarkings by port-of-call over the last nine years of service. Exhibit 4.7 is provided for use as a baseline description of the historic service levels to Aleutian chain ports. Service levels are defined by the number of round-trips per year except in the case of False Pass and Akutan which have only been served on the outbound and inbound legs respectively, since 1993. The top two ports-of-call in terms of ridership are Kodiak and Homer. These ports are served weekly and provide easy access to major population centers. Appendix F provides similar data for each individual port-of-call in the study area.

Exhibit 4.5
Annual Embarkings by Southwest Port-of-Call

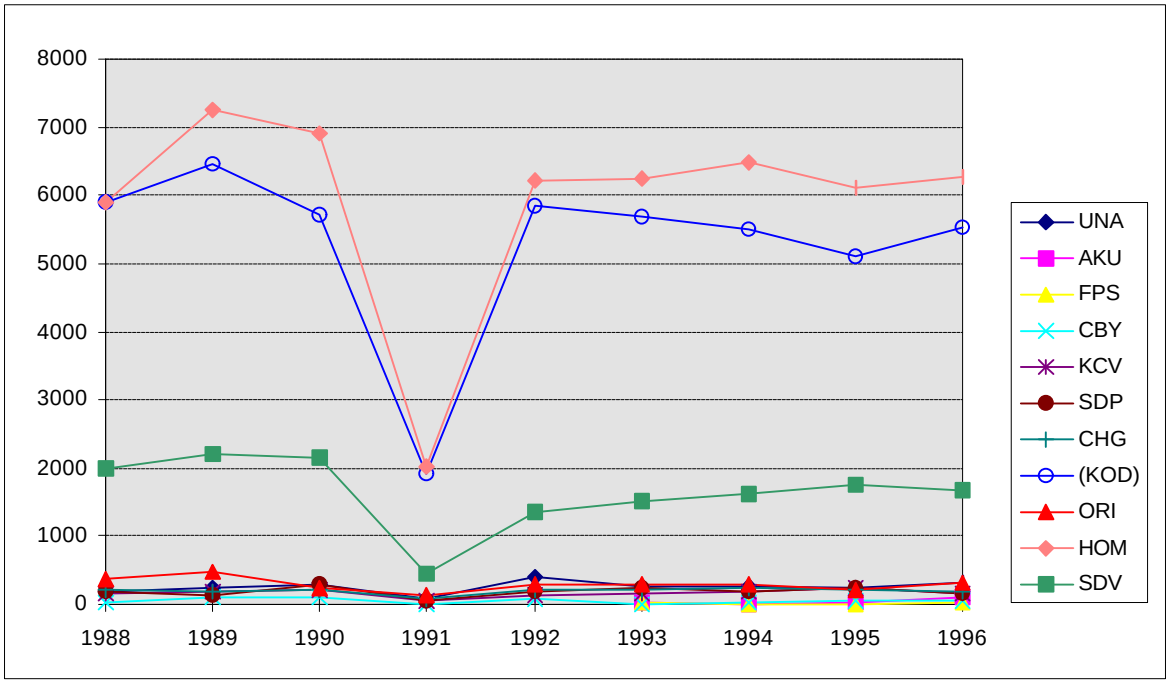
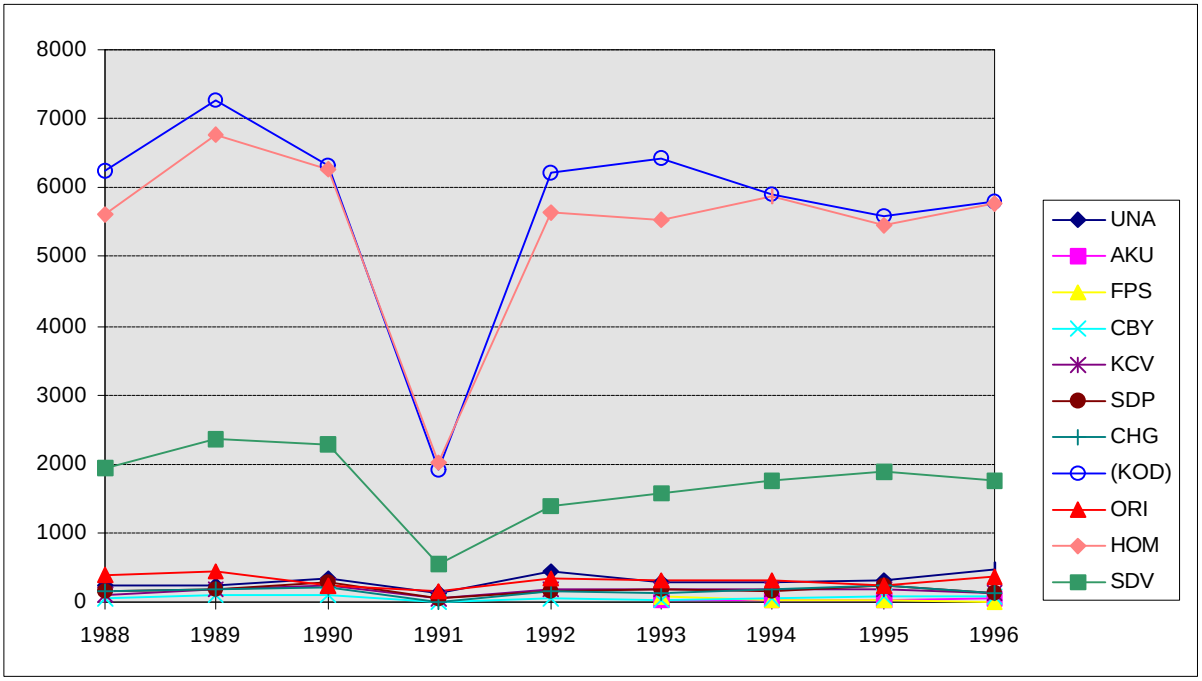


Exhibit 4.6
Annual Disembarkings by Southwest Port-of-Call



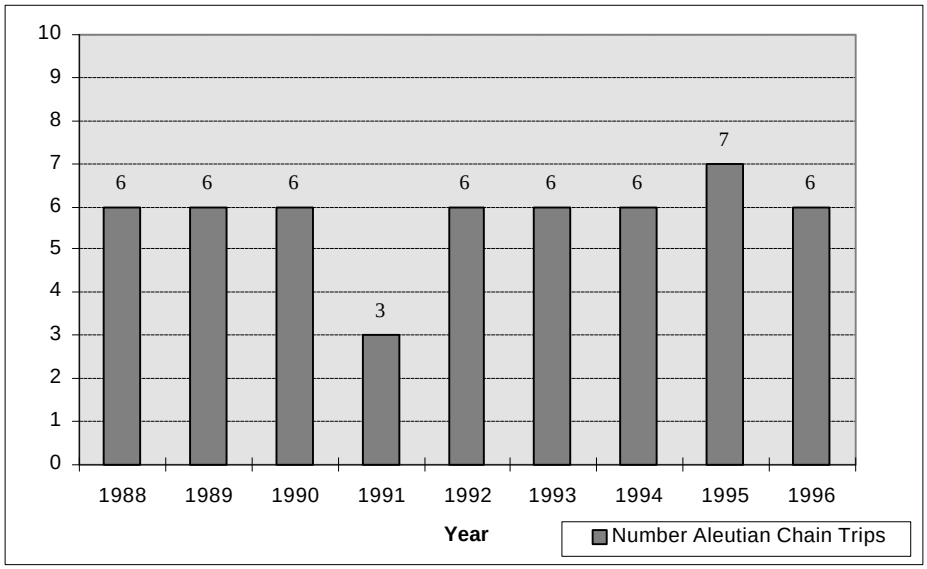
Southwest Alaska ferry ridership is primarily comprised of passenger trips either originating or destined for communities outside the region. Indeed, these external trips constitute 94 percent of all passenger trips, while the remaining 6 percent are trips internal to Southwest Alaska (i.e., trips both originating within and destined for a Southwest port). Exhibits 4.8 and 4.9 describe the annual magnitude of external and internal ridership in recent years. Overall, there are slightly more passengers traveling to Southwest Alaska than there are passengers boarding AMHS from within Southwest Alaska. Note that the overall magnitude of passenger demand has remained fairly flat over time. However, the trendline in Exhibit 4.9 does show a slight growth in trips internal to Southwest Alaska while Exhibit 4.8 shows a slight decline in external trips over time.

Table 4.17 describes the annual origin-destination trip pattern averaged over the last nine years. Note that the pattern of origins and destinations for AMHS ridership is similarly affected by the port-of-call level of service. For example, the AMHS route in Southwest Alaska connects to the surface highway system in Homer, Seward, and Valdez, which means that many passengers disembarking in one of these ports may actually be headed to Anchorage or other distant destinations by another transportation mode. For this reason, Tables 4.18 and 4.19 identify the gross difference between internal and external passenger demand, respectively. Note that these tables represent total ridership over the last nine years, not annual averages. They reveal passenger access demands by port, but the grand totals cannot be directly compared to Table 4.17.

Last, because AMHS service in the study area is highly seasonal, it is unclear how much demand may actually exist during the winter months, especially for example among residents in Aleutian chain ports-of-call. Analysis of monthly growth in ridership over time was conducted to analyze the potential for a longer season or greater frequency of service in the

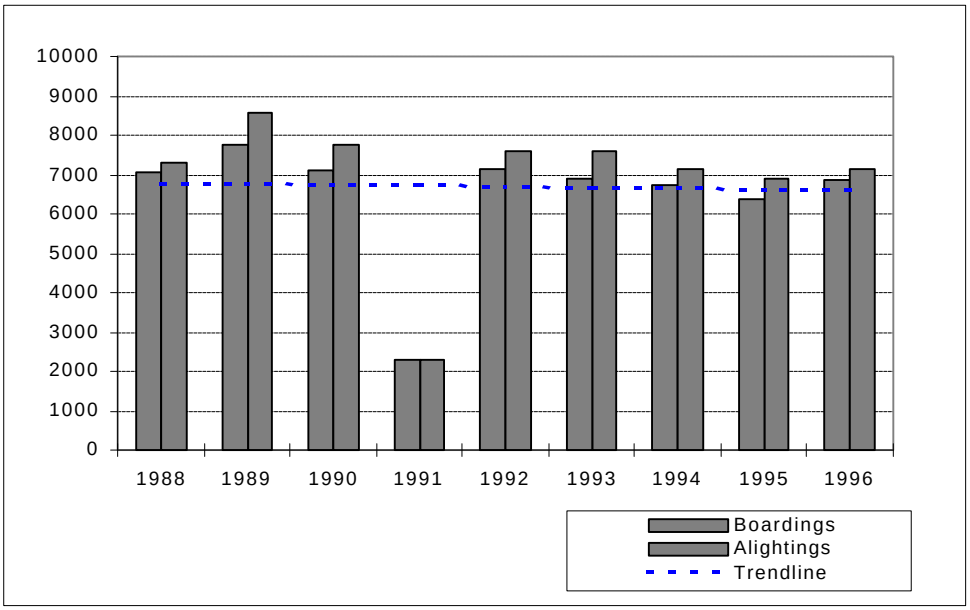
shoulder periods (i.e., in April/May and October). The results did not indicate any significant stable trend over the last nine years of service. Even though there are some years during which ridership in the shoulder period has been noticeably higher, there was no sustained evidence of a monthly growth trend.

Exhibit 4.7
Annual Service to Aleutian Chain Ports



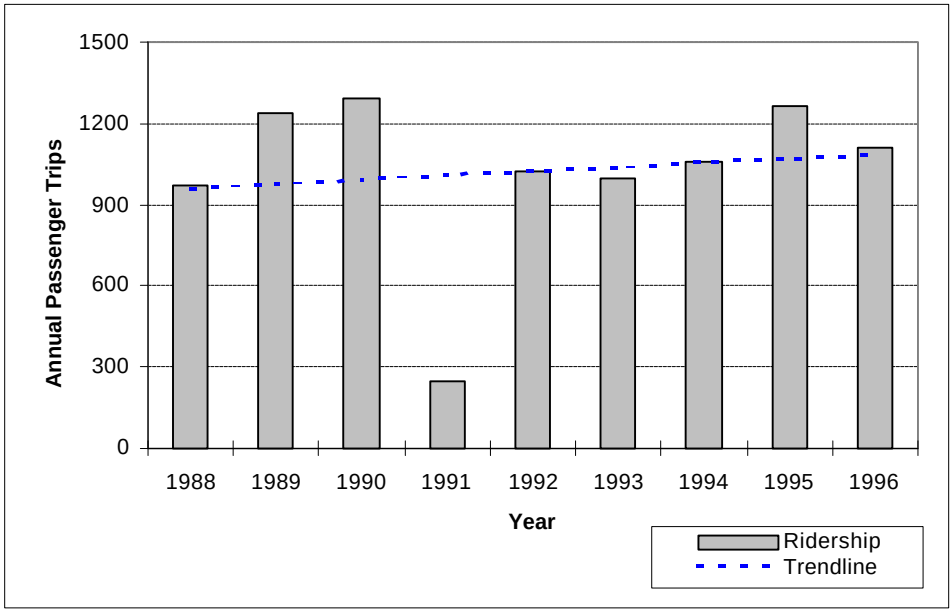
Source: AMHS schedules.

Exhibit 4.8
Annual External Ridership – 1988-1996*



** Passenger trips originating in OR destined for ports in the study area.*
Source: AMHS

Exhibit 4.9
Annual Internal Ridership – 1988-1996*



** Passenger trips originating in OR destined for ports in the study area.*
Source: AMHS

Table 4.17
Average Annual Passenger Trips by Origin-Destination Pair*

Origin\Destination	AKU	CBY	CHG	FPS	KCV	KOD	ORI	SDP	UNA	HOM	SDV	SRD	CDV	VDZ	Total
Akutan - AKU		0	2	0	0	0	0	0	12	1	0	0	0	0	15
Cold Bay - CBY	0		0	3	22	2	0	16	7	5	0	2	0	0	56
Chignik - CHG	4	0		0	1	96	0	9	10	49	1	27	0	0	197
False Pass - FPS	1	0	0		1	0	0	1	4	0	0	0	0	0	8
King Cove - KCV	1	31	1	9		6	1	73	12	23	0	18	0	0	175
Kodiak - KOD	0	2	92	0	5		145	18	67	3,517	45	1,369	1	32	5,293
Port Lions - ORI	0	0	0	0	1	131		2	0	120	2	34	0	0	289
Sand Point - SDP	1	13	11	12	78	23	2		14	22	0	17	0	0	193
Unalaska - UNA	16	7	6	1	11	57	0	10		101	2	49	0	0	261
Homer - HOM	1	7	42	7	37	3,822	103	39	162		1,657	52	0	11	5,939
Seldovia - SDV	0	0	1	0	0	89	1	0	10	1,561					1,622
Seward - SRD	0	0	0	0	1	1,474	62	0	5	24					1,567
Cordova - CDV	0	0	0	0	0	10	0	0	0	3					13
Valdez - VDZ	0	0	0	0	0	68	0	0	0	11					79
Total	23	61	155	31	157	5,738	314	170	303	5,438	1,706	1,568	1	43	15,708

** Averaged over most recent 9 year period, 1988-1996.*
Source: AMHS

Table 4.18
Internal Passenger Trips by Origin-Destination Pair* – 1988-1996

Origin/Destination	AKU	CBY	CHG	FPS	KCV	KOD	ORI	SDP	UNA	Total
AKU		1	21	0	0	1	0	0	104	127
CBY	0		2	10	201	15	0	146	60	434
CHG	15	3		0	7	875	0	83	87	1,070
FPS	3	0	0		12	0	0	13	34	62
KCV	5	288	8	34		57	8	668	112	1,180
KOD	0	16	842	0	42		1323	166	602	2,991
ORI	0	0	0	0	8	1200		15	1	1,224
SDP	4	123	98	48	745	206	15		126	1,365
UNA	68	65	55	5	102	514	0	90		899
Total	95	496	1,026	97	1,117	2,868	1,346	1,181	1,126	9,352

** Trips originating in AND destined for study area ports.*
Source: AMHS Database

Table 4.19
AMHS Vehicle Embarkings from SW Alaska Ports-of-Call (1988-1996 Average) Vans and Non-Van Vehicles Combined

AMHS PORT-OF-CALL	TOTAL	AVERAGE
Akutan	0	0
Chignik	315	35
Cold Bay	243	27
False Pass	33	8
King Cove	351	39
Kodiak	19,032	2,115
Port Lions	1,106	123
Sand Point	345	38
Unalaska	489	54
Total	21,914	2,439

Table 4.20
External Passenger Trips by Origin-Destination Pair – 1988-1996*

Origin/Destination	AKU	CBY	CHG	FPS	KCV	KOD	ORI	SDP	UNA	HOM	SDV	SRD	CDV	VDZ	WTR	Total
AKU		0	0	0	0	0	0	0	0	10	0	0	0	0	0	10
CBY	0		0	0	0	0	0	0	0	43	0	18	0	0	0	61
CHG	0	0		0	0	0	0	0	0	443	9	243	0	0	0	695
FPS	0	0	0		0	0	0	0	0	0	0	3	0	0	0	3
KCV	0	0	0	0		0	0	0	0	210	0	158	0	0	0	368
KOD	0	0	0	0	0		0	0	0	32,014	411	12,439	11	287	0	45,162
ORI	0	0	0	0	0	0		0	0	1,115	15	303	0	0	0	1,433
SDP	0	0	0	0	0	0	0		0	198	0	154	0	0	0	352
UNA	0	0	0	0	0	0	0	0		913	18	443	0	0	0	1,374
HOM	2	61	382	28	332	34,790	972	356	1,466		15,096	473	0	100	0	54,058
SDV	0	3	6	0	0	444	5	0	94	14,194		102	1	43	0	14,892
SRD	0	0	4	0	5	13,416	567	3	47	217	117					14,376
CDV	0	0	0	0	0	94	0	0	0	27	9					130
VDZ	0	0	0	0	0	610	2	0	0	100	10					722
WTR	0	0	0	0	0	0	0	0	0	0	0					0
Total	2	64	392	28	337	49,354	1,546	359	1,607	49,484	15,685	14,336	12	430	0	133,636

** Trips originating in OR destined for study area ports.*
Source: AMHS Database

FREIGHT MOVEMENT

The *M/V Tustumena* is rarely booked full to capacity with container vans. Over the last eight years, only about 2.4 percent of all vehicle freight on the Southwest/Southcentral system were vans. Kodiak and Cordova, where AMHS vessels do deliver vans of perishable goods to local restaurants, grocery stores, individuals, and food distribution businesses, are two exceptions in the Southwest/Southcentral AMHS service area. Otherwise, AMHS-shipped freight in the study area consists primarily of bulky items that are difficult to ship by air, such as construction or repair equipment, commercial fishing boats, building supplies, and personal vehicles.

More than 90 percent of all freight moved on the Southwest/Southcentral AMHS system is carried between three major ports: Kodiak, Seward, and Homer. Over time, the relative order of magnitude among these ports has changed and does vary somewhat between vehicles and container vans. However, the top three origins and destinations for container van traffic and non-van vehicle traffic have remained the same. Table 4.21 describes the obvious breaking point and cut-off before the fourth highest port in terms of vehicle and van volumes. Port Lions, Unalaska and in one instance, Cold Bay, are the next most significant ports for AMHS freight.

Table 4.21
Freight Movement by Study Area Port – 1988-1996

VAN TRAFFIC			NON-VAN TRAFFIC		
Port	*Volume*	*Percent of Total*	*Port*	*Volume*	*Percent of Total*
TOP ORIGINS:					
Kodiak	712	48.1%	Kodiak	18550	43.2%
Seward	380	25.7%	Homer	14858	34.6%
Homer	350	23.6%	Seward	6373	14.9%
Port Lions	15	1.0%	Port Lions	1109	2.6%
Unalaska	8	0.5%	Unalaska	512	1.2%
Other	15	1.0%	Other	1496	3.5%
Total:	*1480*	*100.0%*	*Total:*	*42898*	*100.0%*
TOP DESTINATIONS:					
Kodiak	735	49.7%	Kodiak	20198	47.1%
Seward	433	29.3%	Homer	12832	29.9%
Homer	281	19.0%	Seward	6153	14.3%
Port Lions	12	0.8%	Port Lions	1213	2.8%
Cold Bay	10	0.7%	Unalaska	674	1.6%
Other	9	0.6%	Other	1828	4.3%
Total:	*1480*	*100.0%*	*Total:*	*42898*	*100.0%*

Source: AMHS Database

Private Marine Freight Operators

The weather in the Southwest region of Alaska is difficult for navigation throughout the year. In the region of the Pribilof Islands during the summer season “One annoying characteristic of the area is very thick fog accompanying strong winds – navigation is attended with difficulty and danger.” This quote from the Coast Pilot is typical of the information regarding navigation in the Bering Sea, and throughout the Aleutian Chain. The Pribilof Islands are at the southern extent of normal ice cover in the Bering Sea, although the ice edge is usually somewhat north of the islands. Winter ice typically prevents any navigation to Bethel and other Bristol Bay ports as well as to the northwest portion of the Alaska Peninsula.

The summer season in Bristol Bay and along the Aleutians and Alaska Peninsula is also characterized by fog and winds. From early October through April the Gulf of Alaska and Bering Sea are very inhospitable, being frequented by strong storms.

Tidal ranges along the Aleutian Chain are generally in the order of 8 to 14 feet and make possible the construction of permanent docks in the larger communities and at many canneries. Small villages are served by lightering cargo from barges or small ships to landing craft or small boats. In the Bristol Bay region it is common practice for barges to be grounded at low tide and to spend a tide cycle on the beach discharging cargo. Barge mounted cranes are typically used.

In general, transportation service to Southwest Alaska is characterized by operators that are quite creative in finding ways to move cargo to relatively undeveloped ports. Also, it is generally necessary for the various operators, although competitors, to cooperate in getting some cargoes to remote locations.

EXISTING SERVICE

Southwest Alaska marine transportation service is characterized by three components. The first is the large international shipping fleet represented by SeaLand Services and American President Lines (APL). Both of these carriers call at Unalaska (Dutch Harbor) on a weekly basis and transport frozen seafood products to the Far East. SeaLand serves Kodiak and Dutch Harbor with freight from Seattle, while APL only picks up export products for the Far East.

The second major component of the service to Southwest Alaska is the specialty ship fleet of Coastal Transportation and Western Pioneer Shipping. Both maintain fleets of small refrigerator ships. They are configured to carry frozen seafood products south and general cargo and seafood processing support supplies northbound. Coastal has a fleet of seven ships and Western Pioneer has a fleet of 10, of which 9 were active in the middle of the 1997 season. Western Pioneer also operates a fleet of bulk petroleum barges that distribute refined products from the Alaska Peninsula to Southwest Alaska and other parts of western Alaska.

The third component of the transportation system consists of the barge operators that operate seasonal common carrier and contract services to Southwest Alaska. The principal barge operators are Northland Services, Crowley Marine Services, and Samson Tug and Barge. These operators provide the majority of bulky freight to and from the towns and villages in the Southwest Alaska region. Containers and individual items such as buildings, vehicles, boats, construction equipment, and bulk materials can be transported on the flat deck barges operated by these carriers. Crowley Maritime also operates petroleum barges in the region. These carriers also act as feeder services for the international shippers and gather and distribute freight using Dutch Harbor as the hub. Other hubs include Naknek, Bethel, Sitka and Kodiak. The last two are used for trans-shipment of cargoes moving from Southeast Alaska and Prince William Sound ports. Petroleum products move out of the tank farms operated by Crowley at Captain's Bay, in Unalaska, and by Delta Western, a Western Pioneer affiliate, at Dutch Harbor.

A feature of the service to Southwest Alaska is that the capacity for service is quite elastic. The excess capacity may be available in a variety of ways. Typically extra voyages can be added at the end of the normal season and for long range projects, extra equipment can be dedicated to the service area. For example both Western Pioneer and Coastal supplement their service during the peak of the fishing season. Furthermore, contract towing, whereby a customer contracts for a particular service to a particular location, at a negotiated price, can provide substantial capacity, particularly for remote sites with only occasional service.

The service providers all characterize the business as competitive and challenging. The overall level of service seems to be tied into the fishing industry requirements for supplies and transport of finished fish and fish products. Scheduled service is in place to support the normal level of traffic, but peak demands are anticipated and scheduled in advance. Current demand, however, seems to be flat which may be related to the downturn in military activity in Southwest. Also, there appears to be no major construction activity scheduled in the area, although the future potential in this area could be considerable given developments now underway with the Kodiak Launch complex project, slated for construction at Narrow Cape for the terminus of Pasagshak Road, on Kodiak Island.

Even though there is excess capacity, it may not be available to all of the remote villages or even some of the larger communities. The fixed cost of making a stop is quite high. Aside from the fuel, and fixed vessel costs for the voyage, there is also the likelihood that a full longshore gang has to be called out even for a small amount of cargo. One of the operators noted that service may be provided at a substantial loss in the off-season, so that they maintain their relationships with customers for the peak season.

Table 4.22 gives the general service schedule for the major carriers by communities served within Southwest Alaska. Appendix C contains the schedules for these same carriers for communities both inside and out of the region.

Table 4.22
General Service Schedule for Major Private Marine Freight Carriers

Carrier / Frequency of Service / Port	Coastal Transportation Jan 1-Nov 15 Weekly Nov 16-Dec 31 Bimonthly Apr-Aug Twice Weekly	Crowley Marine Services, Inc. April–September Only	Northland Services, Inc. April–September Only	Samson Tug & Barge Year-Round Service–Weekly May–September	SeaLand Service Year-Round Service	Western Pioneer Supplemented During Fishing Season	American President Lines Year-Round Service
Akutan	Weekly					Every 10 days	
Aleknagik		Village service* provided via Dillingham	Service provided via Bristol Bay Villages				
Anchorage		4 times per season	6 times per season		Bi-Weekly		
Chignik	Weekly	2 times per season				Every 10 days	
Clarks Point		3 times per season					
Cold Bay	Weekly					Every 10 days	
Dillingham		7 times per season	9 times per season				
Egegik		2 times per season	4 times per season				
Ekuk			3 times per season				
Ekwok		Village service* provided via Dillingham	Service provided via Bristol Bay Villages				
False Pass	Weekly					Every 10 days	
Igiugig			Service provided via Bristol Bay Villages				
Illiamna			Service provided via Bristol Bay Villages				
King Cove	Weekly			Bi-Weekly		Every 10 days	
Kodiak		1 time per season		Bi-Weekly	Bi-Weekly	Every 10 days	
Kodiak Island		3 times per season					
Koliganek		Village service* provided via Dillingham	Service provided via Bristol Bay Villages				
Larsen Bay						Every 10 days	
Levelock			Service provided via Bristol Bay Villages				
Manokotak		Village service* provided via Dillingham	Service provided via Bristol Bay Villages				
Naknek		7 times/season (incl. occasional village svc)	9 times per season				
Nelson Lagoon		1 time per season					
New Stuyahok		Village service* provided via Dillingham	Service provided via Bristol Bay Villages				
Newhalen			Service provided via Bristol Bay Villages				
Old Harbor						Every 10 days	
Ouzinkie						Every 10 days	
Pedro Bay			Service provided via Bristol Bay Villages				
Pilot Point		Village Service provided via Naknek					
Port Heiden		Village Service provided via Naknek					
Port Lions						Every 10 days	
Port Moller		4 times per season				Every 10 days	
Saint Paul	Weekly					Every 10 days	
Sand Point	Weekly		2 times per season			Every 10 days	
Seattle	Weekly	Varies	Varies	Bi-Weekly	Weekly	Every 10 days	
South Naknek		5 times per season					
Togiak			2 times per season				
Ugashik		Village Service provided via Naknek					
Unalaska (Dutch Harbor)	Weekly			Bi-Weekly	Bi-Weekly	Every 10 days	Weekly

**Village service is subject to sufficient cargo*

FREIGHT VOLUMES

Tables 4.23 through 4.27 present incoming, outgoing, and local commodity shipments in 1995 at Southwest Alaska region ports, followed by ten years of inbound and outbound marine freight movement according to broad commodity. Exhibits 4.10 and 4.11 show the data plotted by commodity over ten years. The freight movement data presented are all based on data-sorts of data compiled by the U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center (WCSC). The source of the data compiled by WCSC are mandatory reports submitted by shippers.

The WCSC source database provides a detailed breakdown of commodities. The detailed commodities classification provided in the WCSC database was summarized into the following four broad categories:

- Petroleum and petroleum products (including coal and lignite)
- Durable goods
- Fish and fisheries product
- All other (including consumables, building materials, and lumber)

The "All Other" category is broken down further into its individual components in the tables in Appendix D. Unalaska and Kodiak are the ports with highest volumes both inbound and outbound. Inbound volume to the Southwest region has declined slightly over the past ten years, though it peaked around 1990-91. Outbound volumes for the region have increased substantially, from 191,000 tons in 1986 to 1,121,000 tons in 1995, corresponding to a compound annual growth rate of 19.3 percent. The most significant contributions to the increase in outgoing totals were the increase in fish and fish products shipped out of Unalaska (an increase from 74,000 tons in 1986 to 380,000 tons in 1995) and all other commodities traffic from Kodiak (an increase from 7,000 tons in 1986 to 468,000 tons in 1995). Further investigation reveals that the primary contributor to the increase in "other" commodities exports from Kodiak was a major increase in the export of non-ferrous ores.

Table 4.23
Existing Freight Volumes – Incoming and Outgoing by Port

	Commodity Shipments in 1995								
	Petroleum Products		Durable Goods		Fish & Fish Products		All Other		Total/Port
	Incoming	Outgoing	Incoming	Outgoing	Incoming	Outgoing	Incoming	Outgoing	
Akutan	**53**	**18**	**9**	**1**	**1**	**57**	**20**	**36**	**195**
Chignik									
Cold Bay									
Dillingham	2	3	4	6	0	7	3	0	**25**
Egegik	0	1	1			2	0	0	**4**
False Pass									
King Cove			2	0	0	1	0	0	**3**
Kodiak	52	4	11	47	0	75	39	468	**696**
Naknek	11	2	13	0	0	34	8	0	**68**
Old Harbor	0		0			0	0		**0**
Port Lions									
Sand Point	59	0	10	0	0	24	22	1	**116**
Seldovia	0	0	0			0	0		**0**
Unalaska	146	18	16	103	38	261	41	8	**631**
Total/Year	**270**	**28**	**57**	**156**	**38**	**404**	**113**	**477**	

* *Note that in 1990 Waterborne Commerce Statistics changed its data collection methods and started recording data in short tons. An entry of "0" after 1990 indicates that less than 500 Short Tons was reported. If nothing is recorded in a column, no activity was reported.*

Table 4.24
Petroleum and Petroleum Products Traffic by Port and Year

Incoming Petroleum & Petroleum Products, Including Coal and Lignite, by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	3	6	8	7	29						**53**
Chignik	38	0	7	8	7	20					**80**
Cold Bay	3	4	3	7	5	4					**26**
Dillingham	12	3	15	13	8	0	0	0	0	2	**53**
Egegik	0	0	0	0	1	0		0	1	0	**2**
False Pass	2	0	1	0							**3**
King Cove	7	5	7	8	3			5	0		**35**
Kodiak	82	67	109	127	115	97	0		1	52	**650**
Naknek	25	7	21	14	11	1	6	2	3	11	**101**
Old Harbor	1	0	1	1	2	0	1	0	0	0	**6**
Port Lions		0		0	5	0					**5**
Sand Point	8	4	19	8	10	5	5		0	0	**59**
Seldovia	2	0	1	2	2					0	**7**
Unalaska	119	244	255	293	377	423	248	120	74	146	**2299**
Total/Year	**299**	**334**	**439**	**481**	**546**	**550**	**260**	**127**	**79**	**211**	

Outgoing Petroleum & Petroleum Products, Including Coal and Lignite, by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan		1	7	0	10						**18**
Chignik		1	0								**1**
Cold Bay		1	0		3						**4**
Dillingham	2	4	6	1	1	2	2	1	2	3	**24**
Egegik			0							1	**1**
False Pass				0							**0**
King Cove					4						**4**
Kodiak	0	2	9	11	1		0		1	4	**28**
Naknek	2	6	3	3	2	3	2	2	2	2	**27**
Old Harbor		3				0					**3**
Port Lions											
Sand Point		0			0						**0**
Seldovia								0		0	**0**
Unalaska	75	21	23	37	190	71	26	23	24	18	**508**
Total/Year	**79**	**38**	**41**	**52**	**201**	**76**	**30**	**26**	**29**	**28**	

** Note that in 1990 Waterborne Commerce Statistics changed its data collection methods and started recording data in short tons. An entry of "0" after 1990 indicates that less than 500 Short Tons was reported. If nothing is recorded in a column, no activity was reported. It is possible that the sharp reduction in petroleum shipments through Unalaska after 1991 is attributable to the change in data collection methods adopted by the Waterborne Commerce Statistics Center in 1990 (Glosten Associates 1998).*

Table 4.25
Durable Goods Traffic by Port and Year

Incoming Durable Goods by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	1	2	2	1	3						**9**
Chignik	1	1	2	0	1	3					**8**
Cold Bay	0	1	1	0	0	0					**2**
Dillingham	1	1	1	1	2	1	2	4	5	4	**22**
Egegik	0	0	0	0	0	0	0	0	1	1	**2**
False Pass	0	0	0	0	0	0					**0**
King Cove	0	1	2	1	3	3	3	3	4	2	**22**
Kodiak	4	18	9	7	43	15	15	14	31	11	**167**
Naknek	2	2	3	3	5	9	7	21	25	13	**90**
Old Harbor	0	0	0	0	0	0	0	0	0	0	**0**
Port Lions	0	0	0	0	0	0					**0**
Sand Point	1	1	1	1	1	3	0	0	0	2	**10**
Seldovia	0					0	0	0	0	0	**0**
Unalaska	6	11	7	25	46	36	46	25	18	16	**236**
Total/Year	**16**	**38**	**28**	**39**	**104**	**70**	**73**	**67**	**84**	**49**	

Outgoing Durable Goods by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	0	0			1						**1**
Chignik	0	0	0	0	8	2					**10**
Cold Bay	0	0			0	0					**0**
Dillingham	0	0	1	0	0	1	1	3	5	6	**17**
Egegik				0	0	0		0	1		**1**
False Pass	0	0		0	0	0					**0**
King Cove		0	0	0	1	0	0	0	0	0	**1**
Kodiak	2	6	9	4	12	10	15	14	31	47	**150**
Naknek	0	1	2	1	1	0	1	1	2	0	**9**
Old Harbor											
Port Lions											
Sand Point	0	0	0	0		0		0	0	0	**0**
Seldovia											
Unalaska	2	14	1	2	5	10	118	48	52	103	**355**
Total/Year	**4**	**21**	**13**	**7**	**28**	**23**	**135**	**66**	**91**	**156**	

** Note that in 1990 Waterborne Commerce Statistics changed its data collection methods and started recording data in short tons. An entry of "0" after 1990 indicates that less than 500 Short Tons was reported. If nothing is recorded in a column, no activity was reported.*

Table 4.26
Fish and Fisheries Products Traffic by Port and Year

Incoming Fish & Fisheries Products by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	0	0	0	0	1						**1**
Chignik	1										**1**
Cold Bay	0	0									**0**
Dillingham						0	0	1		0	**1**
Egegik								0			**0**
False Pass											
King Cove		0	0	0	0	0	0	0	0	0	**0**
Kodiak	36	1	3	2	7	1	34	39	49	0	**172**
Naknek						0	1	10	0	0	**11**
Old Harbor					0		0				**0**
Port Lions											
Sand Point	0	0	0	0	0	0	0	0	0	0	**0**
Seldovia											
Unalaska	0	5	1	15	21	27	43	38	22	38	**210**
Total/Year	**37**	**6**	**4**	**17**	**29**	**28**	**78**	**88**	**71**	**38**	

Outgoing Fish & Fisheries Products by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	11	10	13	12	11						**57**
Chignik	0	1	3	0	0	0					**4**
Cold Bay	4										**4**
Dillingham				2	1	5	1	7	6	7	**29**
Egegik			0		0	1	0	3	3	2	**9**
False Pass	0	0	0	0	0	0					**0**
King Cove		9	11	3	3	5	3	2	1	1	**38**
Kodiak	62	76	157	167	101	69	34	58	49	75	**848**
Naknek	4	8	7	19	24	15	35	33	17	34	**196**
Old Harbor	2	1			1	0	0			0	**4**
Port Lions											
Sand Point	1	2	3	0	2	6	6	3	0	1	**24**
Seldovia						0				0	**0**
Unalaska	2	21	33	287	241	475	523	592	449	261	**2884**
Total/Year	**86**	**128**	**227**	**490**	**384**	**576**	**602**	**698**	**525**	**381**	

** Note that in 1990 Waterborne Commerce Statistics changed its data collection methods and started recording data in short tons. An entry of "0" after 1990 indicates that less than 500 Short Tons was reported. If nothing is recorded in a column, no activity was reported.*

Table 4.27
All Other Commodities Traffic by Port and Year

All Other Commodities Incoming by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	**2**	**5**	**7**	**4**	**2**						**20**
Chignik	0	5	2	0	0	2					**9**
Cold Bay	3	0	0	0	0	0					**3**
Dillingham	8	4	4	4	0	2	1	0	7	3	**33**
Egegik	0	0	0	0	0	0	0	0	0	0	**0**
False Pass	0	0	0	0	0	0					**0**
King Cove	0	3	5	3	0	1	1	1	0	0	**14**
Kodiak	44	261	57	50	47	23	241	352	426	39	**1540**
Naknek	7	9	9	10	4	7	8	5	10	8	**77**
Old Harbor	0	0	0	0	0	0	0	0		0	**0**
Port Lions	0	0	0	0	0	0					**0**
Sand Point	2	3	2	2	2	3	3	2	2	1	**22**
Seldovia	0					0	0		0	0	**0**
Unalaska	15	23	42	57	13	54	44	42	51	41	**382**
Total/Year	**81**	**313**	**128**	**130**	**68**	**92**	**298**	**402**	**496**	**92**	

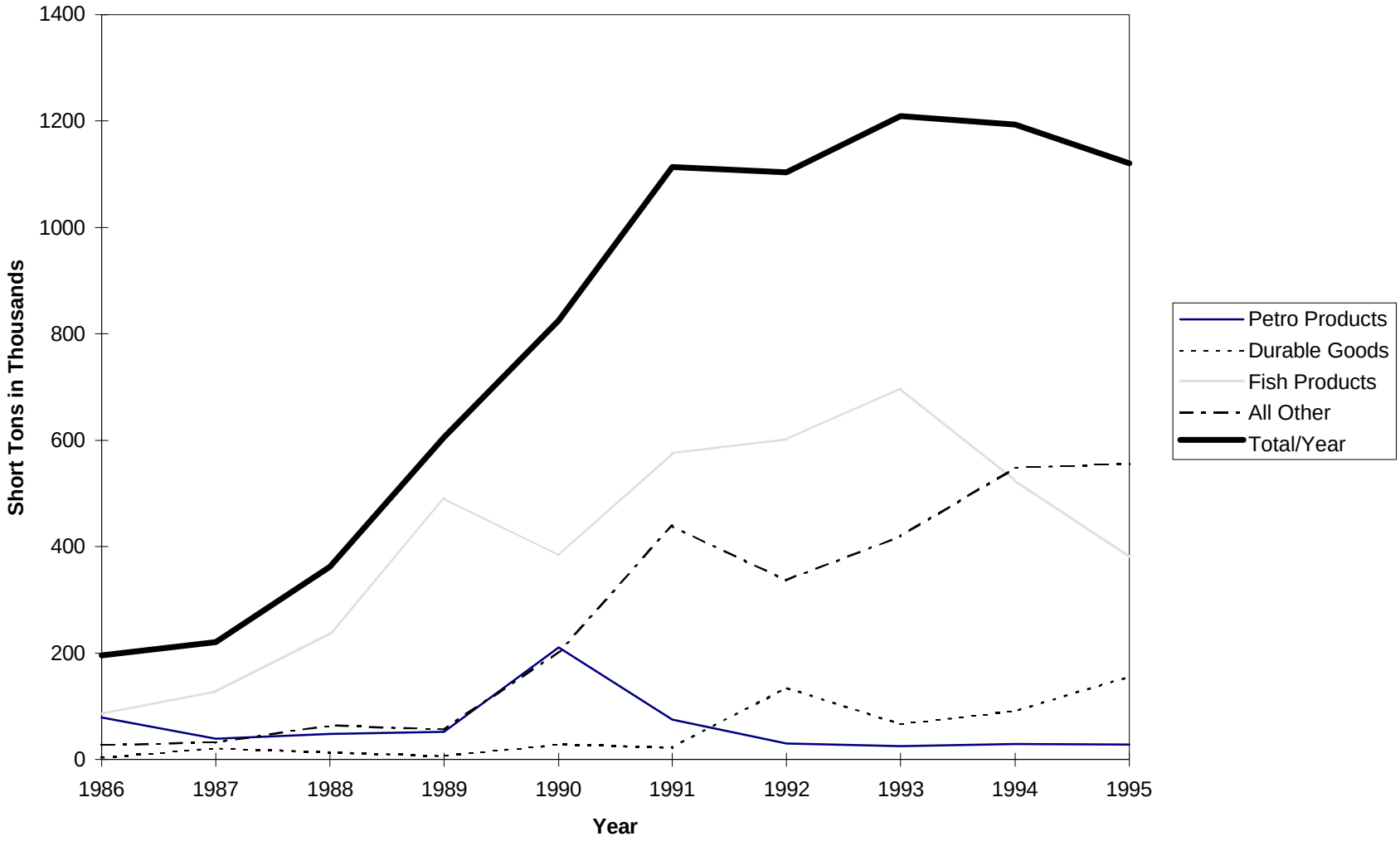
All Other Commodities Outgoing by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	1	2	3	2	28						**36**
Chignik	0	0	0	0							**0**
Cold Bay	0	0	1	0							**1**
Dillingham	0	1	1	1	0	0	0	0	0	0	**3**
Egegik		0		0						0	**0**
False Pass	0	0	1	0							**1**
King Cove	0		1	1		0	0	0	0	0	**2**
Kodiak	7	23	42	32	134	356	240	314	406	468	**2022**
Naknek	2	1	0	1	0	0	0	0	0	0	**4**
Old Harbor	0										**0**
Port Lions	0	0	0								**0**
Sand Point	0	0	0	0	0	0	0	1	0	0	**1**
Seldovia			0				0		0		**0**
Unalaska	17	5	15	20	41	83	97	105	143	88	**614**
Total/Year	**27**	**32**	**64**	**57**	**203**	**439**	**337**	**420**	**549**	**556**	

** Note that in 1990 Waterborne Commerce Statistics changed its data collection methods and started recording data in short tons. An entry of "0" after 1990 indicates that less than 500 Short Tons was reported. If nothing is recorded in a column, no activity was reported.*

Exhibit 4.10 Incoming Freight Totals by Commodity and Year – 1986-1995

Exhibit 4.11 Outgoing Freight Totals by Commodity and Year – 1986-1995



4.2 AIR TRANSPORTATION

Aviation plays a key role in the transportation system of the Southwest Alaska Region. In fact, the primary means of accessing nearly all of the 53 communities in the region is by air. Every community has some type of airport served by scheduled or air taxi services. Mainline service connects the region to the rest of the world through the main hub airports at Dillingham, Cold Bay, King Salmon, Kodiak, and Unalaska. Because the region is characterized by small population centers, and is separated by long distances and rugged terrain, a higher percentage of the freight flows to and from the Southwest region by air as compared to other regions of the State. In fact, in the more remote villages more than half of all goods consumed arrive by air (Alaska Intermodal Transportation Plan 1994).

Airports

There are 66 airports (13 seaplane facilities and 53 airports) serving the 53 communities in the Southwest Region. Table 4.28 contains an inventory of the airport facilities in Southwest Alaska, including the community served, the airport name, the DOT&PF Classification, the airport's ownership/management, the numbers of annual operations, runway length and width, and the surface type. Table 4.29 contains an inventory of navigation aids in the region and Table 4.30 presents information on the approach aids at Southwest Alaska Airports. Of the 66 airports, the DOT&PF manages 42. Eleven of the airports are paved and the remainder are surfaced with gravel, dirt, or some combination thereof. The Cold Bay airport has the longest runway in the region at 10,420 feet and in fact is the third longest in the State behind Anchorage and Fairbanks. The next longest civilian airports are at King Salmon (8,500 feet), Kodiak (7,562 feet), Dillingham (6,404 feet), Port Heiden (6,250 feet), St. Paul (5,077 feet), St. George (5,000 feet), and Unalaska (3,900 feet). As a smaller transportation hub, Port Alsworth has two private airstrips open to public use and provides service to Lake Clark National Park via several air taxi services. It is expected that a public airstrip will be constructed within the next decade. There are several military airports in the region that have historically been served by commercial carriers. The military population in the region has significantly downsized in recent years and use of these facilities is decreasing.

Table 4.28
Southwest Alaska Airport Facilities

Community	*Airport name*	*Class*	*Management*	*Facility*	*Operations*	*Length*	*Width*	*Surface*
Adak Island	Adak NAS	Local	Military	Airport	10,720	7,790	200	Asphalt
						7,606	200	Asphalt
Akhiok	Akhiok	Community	DOT&PF	Airport	1,600	3,060	60	Gravel
Akutan	Akutan	Community	Public Domain	Seaplane	5	10,000	1,000	Water
Aleknagik	Aleknagik (new)	Community	DOT&PF	Airport	2,500	2,070	90	Gravel
Aleknagik	Tripod	Local	Public domain	Airport	125	850	50	Gravel-dirt
Amchitka	Amchitka Island	Local	USAF	Airport	10	9,100	150	Asphalt
Atka	Atka	Community	DOT&PF	Airport	150	3,100	50	Asphalt
Attu	Casco Cove CGS	Local	Coast guard	Airport	?	5,800	150	Asphalt
Cape Sarichef	Cape Sarichef	Local	USFWS	Airport	400	3,500	120	Gravel
Chernofski Harbor	Chernofski Harbor	Local	U.S.	Seaplane	?	5,000	2,000	Water
Chignik	Chignik	Community	DOT&PF	Airport	3,500	2,600	60	Gravel
Chignik	Chignik Bay SPB	Local	Public Domain	Seaplane	210	10,000	4,000	Water
						6,000	4,000	Water
Chignik	Chignik Fisheries	Local	Private	Airport	400	1,630	30	Gravel
Chignik Flats	Chignik Lagoon	Community	Municipal	Airport	2,400	1,600	60	Gravel
Chignik Lake	Chignik Lake	Community	DOT&PF	Airport	720	2,800	60	Gravel
Clarks Point	Clarks Point	Community	DOT&PF	Airport	6,000	2,600	85	Gravel
Cold Bay	Blinn Lake	Local	Public Domain	Seaplane	?	2,500	1,000	Water
						2,000	1,000	Water
Cold Bay	Cold Bay	Regional cent	DOT&PF	Airport	2,394	10,420	150	Asphalt

File: 25166.6.P.3.1 7/21/98 I:\pws_swak_25166\southwest alaska\technic\task_3\exist\final.doc

Table 4.28 (cont.)

Community	Airport name	Class	Management	Facility	Operations	Length	Width	Surface
Dillingham	Dillingham	Regional cent	DOT&PF	Airport	62,630	6,404	150	Asphalt
Egegik	Egegik (new)	Community	DOT&PF	Airport	13,500	3,000	75	Gravel
Ekuk	Ekuk	Local	Private	Airport	1,300	1,200	40	Gravel-dirt
Ekwok	Ekwok	Community	DOT&PF	Airport	2,200	2,720	75	Gravel
False Pass	False Pass	Community	DOT&PF	Airport	1,050	2,100	80	Gravel
Igiugig	Igiugig	Community	DOT&PF	Airport	7,900	3,000	75	Gravel
Iliamna	Iliamna	Transport	DOT&PF	Airport	15,500	5,085	100	Gravel
Ivanof Bay	Ivanof Bay	Local	Public Domain	Seaplane	50	10,000	4,000	Water
Kakhonak	Kakhonak	Community	DOT&PF	Airport	?	2,900	60	Gravel
Karluk	Karluk	Community	DOT&PF	Airport	?	2,000	50	Gravel
Karluk Lake	Karluk Lake SPB	Local	ADF&G	Seaplane	150	10,000	1,000	Water
Katmai N.P.	Lake Brooks SPB	Unclassified	Natl. Park	Seaplane	400	5,000	4,000	Water
Katmai N.P.	Kulik Lake	Local	Natl. Park	Airport	230	5,000	5,000	Water
						4,350	110	Gravel
King Cove	King Cove	Community	DOT&PF	Airport	500	3,360	115	Gravel
King Salmon	King Salmon	District	DOT&PF	Airport	51,300	8,500	100	Asphalt
						4,000	100	Asphalt
						4,000	500	Water
Kitoi Bay	Kitoi bay SPB	Local	ADF&G	Seaplane	1,800	4,000	1,000	Water
Kodiak	Inner Harbor SPB	Local	Municipal	Seaplane	2,500	5,000	100	Water
Kodiak	Kodiak	Regional cent	DOT&PF	Airport	46,000	7,562	150	Asphalt
						5,400	150	Asphalt
						5,011	150	Asphalt
Kodiak	Kodiak Muni	Local	Municipal	Airport	11,200	2,475	40	Asphalt-gravel
Koliganek	New Koliganek	Community	DOT&PF	Airport	1,050	3,000	75	Gravel
Larsen Bay	Larsen Bay	Community	DOT&PF	Airport	4,100	3,000	75	Gravel
Levelock	Levelock	Community	DOT&PF	Airport	1,450	1,900	45	Gravel
						1,800	40	Gravel
Manokotak	Manokotak	Community	DOT&PF	Airport	1,200	2,740	75	Gravel
Naknek	Naknek	Local	DOT&PF	Airport	29,000	1,950	50	Gravel
						2,000	300	Water
						1,850	45	Gravel
Nelson Lagoon	Nelson Lagoon	Community	DOT&PF	Airport	?	4,000	50	Gravel-turf
New Stuyahok	New Stuyahok	Community	DOT&PF	Airport	950	1,800	50	Gravel
Nondalton	Nondalton	Community	DOT&PF	Airport	1,250	2,800	75	Gravel
Old Harbor	Old Harbor	Community	DOT&PF	Airport	3,400	2,700	60	Gravel
Ouzinkie	Ouzinkie	Community	DOT&PF	Airport	500	2,085	80	Gravel
Pauloff Harbor	Pauloff Harbor	Local	Public Domain	Seaplane	?	3,000	500	Water
Pedro Bay	Pedro Bay	Community	DOT&PF	Airport	1,050	3,000	65	Gravel
Perryville	Perryville	Community	DOT&PF	Airport	5,000	7,000	100	Concrete
Pilot Point	Pilot Point	Community	DOT&PF	Airport	5,300	3,100	50	Gravel-dirt
Port Heiden	Port Heiden	Community	DOT&PF	Airport	4,100	6,250	100	Gravel
Port Lions	Port Lions	Community	DOT&PF	Airport	5,300	2,200	75	Gravel
Port Moller	Port Moller AFS	Local	USAF	Airport	650	3,000	100	Gravel
Portage Creek	Portage Creek	Community	DOT&PF	Airport	500	1,470	60	Gravel
						1,920	60	Gravel
St George	New St George	Community	DOT&PF	Airport	325	5,000	150	Gravel
St Paul Island	St Paul Island	Community	DOT&PF	Airport	570	6,500	150	Gravel
Sand Point	Sand Point	Transport	DOT&PF	Airport	1,700	4,000	150	Gravel
Shemya	Shemya AFB	Local	USAF	Airport	1,200	9,990	150	Asphalt
South Naknek	South Naknek nr 2	Local	DOT&PF	Airport	25,000	3,300	70	Gravel
Squaw Harbor	Squaw Harbor	Local	Public Domain	Seaplane	50	5,000	5,000	Water
Tikchik	Tikchik Lodge	Local	Public Domain	Seaplane	150	2,000	2,000	Water
Togiak Village	Togiak	Community	DOT&PF	Airport	17,000	4,200	60	Gravel
Twin Hills	Twin Hills	Community	DOT&PF	Airport	1,770	3,000	60	Gravel
Ugashik	Ugashik (new)	Community	DOT&PF	Airport	?	3,000	62	Gravel
Unalaska	Unalaska	District	DOT&PF	Airport	744	3,900	100	Asphalt

Operations are in Take-Offs and Landings, per FAA Form 5010. Source: Alaska Aviation System Plan, 1996.
Note: Port Alsworth is excluded because it has an unclassified private airport.

Table 4.29
Radio Aids to Navigation – Southwest Alaska

Aid Name	Nav. Aid	Frequency	Airports Served
Adak	NDB [10]	347	Adak NAF
Borland	NDB	390	Sand Point
Cold Bay	VORTAC	112.60	Cold Bay, Blinn Lake SPB, False Pass, King Cove
Dillingham	VOR/DME	116.40	Aleknagik (new), Aleknagik SPB, Tripod, Mission School, Clarks Point, Dillingham, Shannons Pond SPB, Ekuk, Ekwok, Manokotak, Portage Creek
Dutch Harbor	NDB	283	Akutan SPB, Unalaska
Elfee	NDB	341	Cold Bay, Blinn Lake SPB
English Bay	NDB	374	New St. George, St. Paul
Iliamna	NDB	328	Igiugig, Iliamna, Kokhanok, Nondalton, Pedro Bay
King Salmon	VORTAC	112.80	Egegik, Bartletts, King Salmon, Levelock, Naknek, Tibbetts, Portage Creek, South Naknek, PAF Cannery
Kodiak	VORTAC	117.10	Kodiak, Kodiak Municipal, Kodiak Lily lake SPB, Inner Harbor SPB, Kodiak/Spruce Cape HP, Ouzinkie, Port Lions
Kulik Lake	NDB	334	Igiugig, King Salmon, Kokhanok, Levelock
Port Heiden	NDB	371	Chignik, Chignik Lagoon, Chignik Fisheries, Port Heiden
Pribilof	NDB	399	New St., George
Razer	NDB	215	King Salmon, Naknek, Tibbetts, South Naknek, Diamond NN Cannery, PAF Cannery
Reeve	NDB	362	New St. George, St. Paul
Saldo	NDB	400	King Salmon, Naknek, Tibbetts, South Naknek, Diamond NN Cannery, PAF Cannery
St. Paul Is.	NDB	314	New St. George, St. Paul
Togiak	NDB	393	Togiak, Twin Hills
Turnbull	VOR/DME	113.00	Chignik, Chignik Lagoon, Chignik Fisheries, Port Heiden
Wood River	NDB	429	Aleknagik (new), Aleknagik SPB, Tripod, Mission School, Clarks Point, Dillingham, Shannons Pond SPB, Ekuk, Ekwok, Manokotak, Portage Creek
Woody Island	NDB	394	Kodiak, Kodiak Municipal, Kodiak Lily Lake SPB, Inner Harbor SPB, Kodiak/Spruce Cape HP, Ouzinkie, Port Lions

[10] Non-directional beacons (NDB) are radio navigational aids designed to line a place up with a runway before visual contact of the runway is made, after which point of the navigational aids are employed. One reviewer of the draft version of this report questioned whether the four NDB's serving St. Paul and St. George are all active. According to the Alaska DOT and PF's Jim Perham, they are active (March 1998, personal communication).

Table 4.30
Approach Aids – Southwest Alaska

Airport name	Approach	Aids	Lighting
Adak NAF	Precision and Nonprecision Instrument	VASI	Runway Edge Lights, Centerline Lights, Approach Lights
Akhiok	Basic	None	None
Akutan SPB	Basic	None	None
Aleknagik (new)	Basic	None	None
Tripod	Basic	None	None
Amchitka Island	Basic	None	None
Atka	Basic	None	Runway Edge Lights
Cold Bay	Precision and Nonprecision Instrument	VASI,ILS	Runway Edge Lights, Approach Lights
Dillingham	Nonprecision Instrument	VASI	Runway Edge Lights
Egegik (new)	Basic	None	Runway Edge Lights
Igiugig	Basic	None	Runway Edge Lights
Iliamna	Basic	VASI	Runway Edge Lights
King Salmon	Precision and Nonprecision Instrument	VASI,ILS	Runway Edge Lights, Approach Lights
Kodiak	Precision and Nonprecision Instrument	VASI, ILS/DME	Runway Edge Lights, Runway End Identifier Lights
Kodiak Emergency/ Spruce HP	Basic	None	Runway Edge Lights
Larsen Bay	Basic	None	Runway Edge Lights
Levelock	Basic	None	Runway Edge Lights
Manokotak	Basic	None	Runway Edge Lights
Naknek	Basic	None	Runway Edge Lights
New Stuyahok	Basic	None	Runway Edge Lights
Nondalton	Basic	None	Runway Edge Lights
Pedro Bay	Basic	None	Runway Edge Lights
Port Heiden	Basic	VASI	Runway Edge Lights
Port Lions	Basic	None	Runway Edge Lights
New St. George	Basic	None	Runway Edge Lights
St. Paul Island	Basic	VASI	Runway Edge Lights, Approach Lights
Sand Point	Nonprecision Instrument	VASI	Runway Edge Lights, Runway End Identifier Lights
South Naknek nr 2	Basic	VASI	Runway Edge Lights
Togiak	Basic	VASI	Runway Edge Lights, Runway End Identifier Lights
Twin Hills	Basic	None	Runway Edge Lights
Unalaska	Nonprecision Instrument	VASI	Runway Edge Lights, Runway End Identifier Lights

AIRPORT CLASSIFICATION

The 1996 Alaska Aviation System Plan consolidates the previous six classifications and now classifies airports into three classifications. Classification status identifies the type of aircraft expected to use the airport. The three types of airport classification are regional airports, community airports, and local airports. Figure 4 indicates the location and classification of airports in Southwest Alaska. See Table 4.31 for a complete listing of air carriers serving Southwest airports, the types of service offered, and the air carriers' bases of operation. **Regional Airports** are 1) primary or secondary hubs for passenger, cargo, or mail traffic, 2) provide primary access to populations greater than 1,000 or 3) support economic activities or unusual requirements of regional or statewide significance. Nearly all Regional airports are public, but airports meeting the third criterion could be private. **Community Airports** are the main airports, heliports, or seaplane facilities that serve rural communities of at least 25 permanent year-round residents. **Local Airports** are airports, heliports, or seaplane facilities that are not in the regional or community classes. The following communities have community airports:

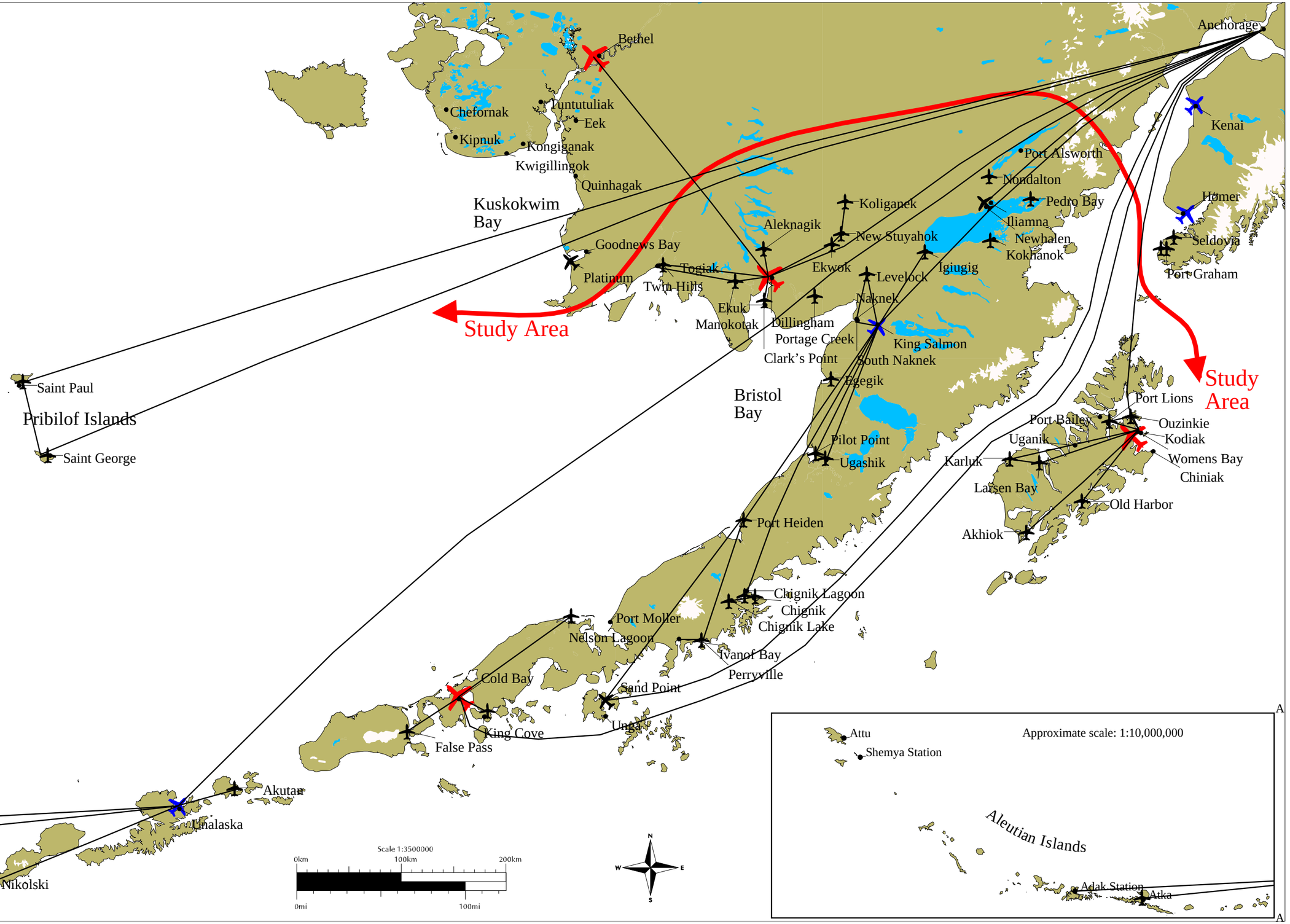
- Akhiok
- Akutan
- Aleknagik
- Atka
- Chignik
- Chignik Flats
- Chignik Lake
- Clarks Point
- Egegik
- Ekwok
- False Pass
- Igiugig
- Kokhanok
- Karluk
- King Cove
- Koliganek
- Larsen Bay
- Levelock
- Manokotak
- Nelson Lagoon
- New Stuyahok
- Nondalton
- Old Harbor
- Ouzinkie
- Pedro Bay
- Perryville
- Pilot Point
- Port Heiden
- Port Lions
- Portage Creek
- Sand Point
- St. George
- St. Paul Island
- Togiak Village
- Twin Hills
- Ugashik

LOCAL AIRPORTS

Local airports serve as secondary access to communities and include recreational and emergency airstrips. There are 22 airports classified as local in Southwest Alaska.

HUB AIRPORTS

All hub airports have set service and prop planes as well as large and small certificated carriers and cargo service. The main hub airports serving the region are located at Cold Bay, Dillingham, King Salmon, Kodiak, and Unalaska. See Table 4.32 for a listing of scheduled air service by regional flight service hub. These airports are described in greater detail below.



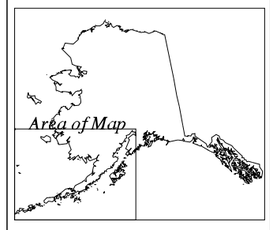
TRANSPORTATION & PUBLIC FACILITIES • STATE OF ALASKA •

HDR Alaska | PB 100 YEARS

File:	Date:	By:
swairp01.aml	11/11/97	PKW

Legend

- Regional Center
- District
- Transport
- Community
- Air Carrier Scheduled Service



Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers

Aviation System

Southwest Alaska Transportation Plan

Existing Conditions Technical Memorandum

FIGURE 4

Cold Bay

The Cold Bay airport is located on the Alaska Peninsula on the northwest side of Cold Bay at about 90 feet elevation. Terrain in the area is generally rolling tundra with lakes, lagoons, and sloughs. Mountains, reaching an elevation of 9,000 feet, rise several miles to the southeast and extend westward out the Aleutian Chain. Fuel is available. There is limited aviation repair services at the airport. The Cold Bay Flight Service Station is operated part-time and is located at the airport. There are two runways: a 5,160-foot long cross wind nonprecision, asphalt runway in good condition and a 10,420-foot long, precision approach, asphalt runway also in good condition. Both runways are lighted with high-intensity lights. The Cold Bay airport is classified as a regional center airport by the DOT&PF served by Alaska Airlines and Reeve Aleutian Airlines. Peninsula Airways has planes stationed at the airport with local connecting service to False Pass, King Cove, Sand Point, and Nelson Lagoon (Tables 4.31 and 4.32).

Dillingham

The Dillingham Airport is located two miles west of Dillingham at 80 feet elevation in an area of flat tundra with numerous lakes and streams. The 6,404 foot runway is paved, lighted, and in good condition. Fuel is available and so is minor airframe and power plant service. Float plane landing (summer) and ski-equipped aircraft landing (winter) are available on Shannon's Pond three miles west of town. There are approximately 100 planes based at the airport. Dillingham is classified as a regional center airport serving as a hub for a number of villages in the region (Tables 4.31 and 4.32).

King Salmon

The King Salmon airport is located at elevation 52 feet on flat tundra-like terrain with innumerable small lakes and streams in the vicinity. Katmai National Park is located 25 miles east. King Salmon has two paved and lighted runways. Primary runway 11-29 is 8,500 feet long with high intensity lights and precision and nonprecision approach capability. This runway was resurfaced in 1997 by the Air Force and is in excellent condition. Fuel is available through an operator with a fuel truck. Float plane fuel is available at the local sport shop dock on the river and is limited to summer season and daylight hours. Fuel is also available at Naknek Lake, 16 miles west of King Salmon. There are approximately 39 aircraft based at the airport. Repair services are limited to major repairs and there are no major overhaul capabilities. Scheduled main line carriers provide direct connections to Anchorage (Tables 4.31 and 4.32). Classified as a direct airport, King Salmon serves as a hub to a number of communities along the Alaskan Peninsula and Iliamna Lake area. The King Salmon Airport fulfills key functions in transporting fishers and their crews to their boats insofar as most of the fishing boats that ply the waters of Bristol Bay are stored in either King Salmon or Naknek. This airport also plays a key role in shipping millions of pounds of red salmon, red salmon roe, and sockeye salmon to markets worldwide.

Kodiak

There are two airports and two seaplane bases in vicinity of the City of Kodiak. The community is surrounded by rugged and mountainous terrain. The Inner Harbor Seaplane Base is located in town and the Kodiak (Lilly Lake) Seaplane base is one mile to the northeast. The Kodiak Municipal Airport has one 2,475-foot long 40-foot wide runway that is partly paved and partly gravel. The Kodiak Airport is located approximately three miles southwest of the city of Kodiak. It has three runways, a 7,562-foot precision approach runway; a 5,400-foot basic approach

runway, and a 5,000-foot basic approach runway. All three runways are in good condition, paved and lighted with high intensity lights. Fuel is available at Kodiak Municipal and Kodiak Airports. Commercial jet service is available from Anchorage. There are about 50 aircraft based at the airport (Tables 4.31 and 4.32).

Unalaska

The Unalaska (Dutch Harbor) airport is located one mile north of the City of Unalaska on Amaknak Island. The airport is located directly adjacent and below Mt. Ballyhoo, subjecting the airport to tricky wind conditions. The nonprecision instrument approach runway is 3,900 feet long, paved, and lighted with medium intensity lights. There are four aircraft based at the airport. Fuel is available. The airport is served by Alaska Airlines, Reeve Aleutian Airlines, and Peninsula Airways from Anchorage (Tables 4.31 and 4.32).

Existing Air Service

A number of air carriers serve the communities of Southwest Alaska. Table 4.30 indicates the carriers flying in the region, the type of authorization they have received from the Federal Aviation Administration (FAA), their base of operations, and the communities they serve. There are four large FAA certificated carriers which serve the region from Anchorage via the main hub airports at Cold Bay, Dillingham, King Salmon, Kodiak, and Unalaska. Alaska Airlines and Reeve Aleutian Airways carry both passengers and freight, and Northern Air Cargo and Southern Air Transport provide cargo service only. There are numerous FAA small certificated carriers and air taxi operators based at the major hub airports (Cold Bay, Dillingham, King Salmon, Kodiak, and Unalaska) and a few based in minor hubs (Iliamna, Port Alsworth). Certificated authority means that the carrier has been granted authority to provide air transportation by the U.S. Department of Transportation in the form of a “certificate of public convenience and necessity under Section 401 of the Federal Aviation Act.” In order to carry mail, a carrier must be certificated. Authority as a “commuter air carrier” are exempt for certain portions of the act, but also do not have the authority to carry mail. Because mail is such an important component of the airline revenues in Alaska, there are no “commuter air carriers.” Large certificated carriers use “large” aircraft (aircraft designed to have a maximum passenger capacity of more than 60 seats or payload of 18,000 pounds). Small certificated carriers use “small” aircraft (less than 60 seats or 18,000 pounds payload).

Table 4.32 shows the scheduled routes flown by air carriers in Southwest Alaska and the number of flights per week. Scheduled destinations are visually depicted in Figure 4.

Table 4.31
Air Carriers Serving Southwest Alaska Airports

Carrier	Service	Cert.	Base	Communities Served
Alaska Airlines	DSF	LC	Anchorage	**Cold Bay, Dillingham, King Salmon, Unalaska**
Birchwood Air	Ch	AT	Anchorage	Iliamna, Kokhanok, Nondalton, Pedro Bay, Newhalen
Era Aviation, Inc.	DSC	SC	Anchorage	**Anchorage,** Cold Bay, **Iliamna,** King Salmon, **Kodiak,** Port Heiden, Sand Point, Togiak, Unalaska
F.S. Air Service	DSC	SC	Anchorage	Cold Bay, Dillingham, King Salmon, Kodiak, Kokhanok, Nondalton, St. Paul Island, Togiak, Unalaska
Hagland Aviation	DS	SC	Bethel	Dillingham, Koliganek, Togiak, Twin Hills
Iliamna Air Taxi	Ch	SC	Iliamna	Dillingham, Igiugig, Iliamna, King Salmon, Kodiak, Kokhanok, Koliganek, Levelock, Naknek, New Stuyahok, Nondalton, Pedro Bay, Perryville, Port Alsworth, Port Heiden, Togiak
Katmai Air Service	Ch	AT	King Salmon	King Salmon, Katmai National Park
Lake Clark Air	ChC	AT	Anchorage	Kokhanok, Nondalton, Pedro Bay, Port Alsworth
Merlin Express	C	AT	Anchorage	Dillingham
Northern Air Cargo	C	LC	Anchorage	Aleknagik, **Anchorage,** Cold Bay, **Dillingham,** Ekwok, **Iliamna,** King Cove, **King Salmon, Kodiak,** Koliganek, New Stuyahok, Port Alsworth, Port Heiden, **St. George, St. Paul Island,** Sand Point, Togiak, Unalaska
Peninsula Airways	DSCh	SC	Anchorage	**Aniak,** Atka, Bethel, Cold Bay, **Dillingham, King Salmon**, Kodiak, Nikolski, **McGrath, St. George, St. Mary's, St. Paul Island, Unalaska, Unalakleet**
	DSCh	SC	Cold Bay	**False Pass, King Cove, King Salmon, Nelson Lagoon, Port Moller**
	DSCh	SC	Dillingham	**Anchorage, Cape Newenham, Clarks Point, Ekuk, Ekwok, King Salmon, Koliganek, Manokotak, New Stuyahok, Portage Creek, Togiak, Twin Hills**
	DSCh	SC	King Salmon	**Anchorage,** Chignik, Chignik Lagoon, Chignik Lake, Dillingham, Egegik, Igiugig, Ivanof Bay, Levelock, Naknek, Perryville, Pilot Point, Port Heiden, Ugashik
	DSCh	SC	Kodiak	**Anchorage, Akhiok,** Alitak, Chignik, Karluk, King Salmon, **Larsen Bay, Old Harbor, Ouzinkie,** Port Bailey**, Port Lions,** Uganik
	DS	SC	Unalaska	**Anchorage, Atka, Akutan,** Cold Bay, **Nikolski**
Reeve Aleutian Airways	DSC	LC	Anchorage	**Adak Island**, Attu, **Cold Bay, Dillingham, King Salmon, Port Heiden,** St. George, **St. Paul Island, Sand Point,** Shemya, Unalaska
Southcentral Air	DSC	SC	Kenai	Dillingham, Iliamna, King Salmon, Kodiak
Southern Air	ChC	LC	Anchorage	Adak, Anchorage, Attu, Brooks Lake, Cape Newenham, Clarks Point, Cold Bay, Dillingham, Igiugig, Iliamna, King Salmon, Kodiak, Pilot Point, Port Alsworth
Village Aviation (Camai)	DCh	SC	Bethel	Clarks Point, Dillingham, Ekuk, Manokotak, Naknek, New Stuyahok, Togiak, Twin Hills
Wright Air Service	ChC	SC	Fairbanks	Nondalton
Yute Air	DS	SC	Fairbanks	Aleknagik, **Anchorage, Clarks Point**, **Dillingham, Egegik,** Ekuk, **Ekwok,** Igiugig, Iliamna, King Cove, **King Salmon, Koliganek,** Levelock, **Manokotak,** Naknek, **New Stuyahok, Pilot Point,** Sand Point, South Naknek, **Togiak,** Twin Hills, **Ugashik,** Unalaska

Bold *Community indicates Scheduled Service. D=Domestic; S=Scheduled Service; F=Foreign Service; C=Cargo; Ch=Charter Service. LC=Large Certificated; SC=Small Certificated.*
Source: Compiled by HDR, 1997

Table 4.32
Scheduled Air Carrier Service

Regional Flight Service Hub	Communities Served	Carriers	Weekly Flights	Total
Anchorage	Akutan–Anchorage	P	7	7
	Aleknagik–Dillingham–Anchorage	P	7	7
	Aniak–Anchorage	AA, YT, NAC, P	19, 7, 6*, 19	51
	Chignik Lake–Chignik Lagoon–Chignik Lake	P	14	14
	Cold Bay–Anchorage	AA, RAA	3, 6	9
	Dillingham–Anchorage	AA, YT, NAC, P	28, 7, 10*, 29	74
	Dillingham–King Salmon–Anchorage	YT, P	6, 21	27
	Iliamna–Anchorage	AA, ERA, NAC	14, 21, 5*	40
	Dutch Harbor–Anchorage	AA, P, RAA	22, 7, 6	35
	King Salmon–Anchorage	AA, RAA, NAC	45, 4, 10*	59
	King Salmon–Dillingham–Anchorage	YT, P	6, 21	27
	Kodiak–Anchorage	ERA, NAC, AA	48, 6*, 2	56
	Port Heiden–Sand Point–Anchorage	AA	3, 3	6
	Sand Point–Anchorage	AA, RAA, P	3, 3, 3	9
	St. George Island–Anchorage	AA, NAC, P	3, 3*, 3	9
	St. Mary's Island–Anchorage	AA, NAC, P	5, 3*, 6	14
	St. Paul Island–Anchorage	AA, NAC, RAA, P	6, 3*, 3	12
	South Naknek–King Salmon–Anchorage	P	21	21
	Togiak–Dillingham–Anchorage	P	21	21
	Twin Hills–Dillingham–Anchorage	P	7	7
	Ugashik–King Salmon–Anchorage		1	1
Cold Bay	Anchorage	AA, RAA	3, 6	9
	King Cove	P	6	6
	Nelson Lagoon–Port Moller	P	3	3
Dutch Harbor	Anchorage	AA, P, RAA	22, 7, 6	35
	Akutan	P	14	14
	Atka	P	2	2
	Nikolski	P	2	2
	Adak	RAA	2	2
Dillingham	Anchorage	AA, P, YT, NAC	28, 29, 7, 10	74
	Aleknagik	P	7	7
	Clarks Point/Ekuk	P	21	21
	Clarks Point–Dillingham	YT	6	6
	Ekwok	P	7	7
	Ekwok–New Stuyahok–Koliganek	P	7	7
	King Salmon	YT	6	6
	Manokotak	P	7	7
	Manokotak–Togiak–Dillingham	YT	6	6
	Togiak	P	21	21
	Togiak–Manokotak–Dillingham	YT	6	6
	Togiak–Bethel	YT	3	3
	Twin Hills	P	14	14

Table 4.32 (cont.)

Regional Flight Service Hub	Communities Served	Carriers	Weekly Flights	Total
King Salmon	Anchorage	AA, P	38, 24	62
	Chignik Bay	P	7	7
	Dillingham	P	21	21
	Dillingham–King Salmon	YT	6	6
	Egegik	P	21	21
	Egegik–Pilot Point	P	7	7
	Egegik–Pilot Point–Ugashik	YT, P	6, 1	7
	Igiugig	P	3	3
	Port Heiden–Perryville–Ivanof bay	P	7	7
	South Naknek	P	21	21
	South Naknek–Levelock–King Salmon	YT	6	6
	Ugashik–Pilot Point–Egegik–King Salmon	YT	6	6
Kodiak	Anchorage	ERA	48	48
	Akhiok–Kodiak	P	6	6
	Alitak	P	12	12
	Larsen Bay–Karluk–Kodiak	P	13	13
	Old Harbor	P	14	14
	Ouzinkie–Port Lions–Kodiak	P	14	14
	Port Bailey–Kodiak	P	12	12
	Port Bailey–Uganik–Kodiak	P	12	12
	Uganik–Kodiak	P	6	6

AA=Alaska Airlines; ERA=ERA Aviation; P=PenAir, Inc.; YT=Yute Air Alaska; RAA=Reeve Aleutian; NAC=Northern Air Cargo; H=Hageland Aviation Services.
**=Cargo Only.*

Table 4.33 shows the number of departures scheduled versus the number of departures performed at hub airports in Southwest Alaska by Certificated Route Air Carriers. Scheduled service is defined as service operated over an air carrier's routes, based on published flight schedules. In some cases, (e.g., Cold Bay), the scheduled departures performed were actually greater than the departures scheduled. According to the Office of Airline information, this could result where planes have been added based on unforeseen demand and thus not in the published schedule. This has occurred predominantly at military airports, which experience large troop or cargo movements and unpredictable times. These short-term blips in demand are often handled by adding a second plane or additional trip to the schedule (thereby increasing scheduled departures but not consistently enough to change the printed schedule).

At hubs other than Cold Bay, the scheduled departures performed are between 80 to 90 percent of the departures scheduled. Cancellations are likely due to weather. Although Kodiak has had the largest number of departures scheduled, the King Salmon Airport has had the most departures performed over the last ten years. Kodiak has consistently had the least number of scheduled departures performed as compared to the published schedule, indicating that Kodiak has had the worst weather and/or the airport least able to handle inclement weather. Kodiak's approach from the north is severely limited by Barometer Mountain which contributes to the difficulty of getting in and out of Kodiak. Unalaska appears to have the next worst flying conditions, also due to weather, a short runway, and the location of Ballyhoo Mountain directly adjacent to the runway. It is difficult to determine the departure performance at Cold Bay from the data.

Table 4.33
Aircraft Departures Scheduled and Aircraft Departures Performed By Certificated Route Air Carriers at Southwest Alaska Hub Communities (Select Years)

	1990 Departures				1993 Departures				1995 Departures			
	Performed			Sched.	Performed			Sched.	Performed			Sched.
	S	NS	Total		S	NS	Total		S	NS	Total	
Cold Bay	795	15	810	730	488	19	507	334	518	16	534	472
Dillingham	1,360	28	1,388	1,488	1,345	102	1,447	1,207	863	91	954	752
King Salmon	1,538	273	1,811	1,792	1,418	106	1,524	1,379	1,162	87	1,249	1,102
Kodiak	1,725	37	1,762	1,974	1,117	4	1,121	1,311	905	5	910	965
Unalaska	1,265	6	1,271	1,374	1,031	5	1,036	1,228	805	17	822	808

S=Scheduled; NS=Nonscheduled.
Source: FAA/BTS – Airport Activity Statistics of Certificated Route Air Carriers

Air Passenger Movements

Air travel is the most common way that people move to and from the region and within the region. Table 4.34 shows the historic trends in passenger enplanements at the airports located in Southwest Alaska. Total enplanements includes enplanements by large certificated carriers, small certificated carriers, commuter carriers (of which there are none in Alaska), and air taxi operators.

Table 4.34
Total Enplanements
Southwest Alaska Airports – 1986-1995

Associated City	*Airport Name*	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
Adak Island	Adak NAS	8,231	9,001	7,638	10,185	11,149	10,356	11,971	9,488	7,951	5,991	3,542
Akhiok	Akhiok	501	1,312	1,431	1,220	1,085	1,040	1,307	1,036	1,080	2,120	1,078
Akutan	Akutan	1	479	2,787	2,031	3,462	3,775	4,233	2,846	2,503	2,624	2,994
Aleknagik	Aleknagik				48							
Aleknagik	Aleknagik (new)	165							257	95		74
Aleknagik	Tripod						266	211	215			
Atka	Atka	15	41	149	206	367	253	430	422	372	83	491
Attu	Casco Cove CGS	119	8	157	130	60	73	58	237	57	0	123
Chignik	Chignik	196					23		811	1,000	1,178	1,055
Chignik	Chignik Fisheries	452	555	1,271	1,194	1,821	1,929	2,135	1,984	1,606	1,722	1,408
Chignik	Chignik Lagoon	508	2	446	329	494	503	537	703	785	666	573
Chignik	Chignik Lake	418	225	713	332	712	723	831	81	94		
Clarks Point	Clarks Point	2,843	5,026	2,547	977	2,754	1,859	2,558	2,430	2,090	2,473	1,986
Cold Bay	Cold Bay	8,990	7,886	10,170	10,283	10,375	10,485	13,452	13,046	12,373	14,719	10,836
Dillingham	Dillingham	26,856	57,788	38,307	30,043	55,782	40,958	40,793	38,826	38,469	41,227	37,476
Egegik	Bartletts	18					1,892	2,105	284	251	284	266
Egegik	Egegik (new)									2,307	2,647	
Ekuk	Ekuk	1,178	205	2,378	855	822	882	1,357	1,224	765	946	664
Ekwok	Ekwok	4,387	397	1,080	565	2,518	1,925	798	744	566	639	313
False Pass	False Pass	149	507	620	575	519	645	689	664	777	746	574
Igiugig	Igiugig	604	160	608	706	472	736	583	791	1,435	1,435	1,252

Table 4.34 (cont.)

Associated City	*Airport Name*	*1986*	*1987*	*1988*	*1989*	*1990*	*1991*	*1992*	*1993*	*1994*	*1995*	*1996*
Iliamna	Iliamna	5,262	4,013	4,131	4,873	4,675	5,814	5,333	6,230	5,719	7,016	5,984
Ivanof Bay	Ivanof Bay	70	42	103	99	184	197	266	240	174	203	984
Kakhonak	Kakhonak				896	4	3	92	1,575	1,685	1,758	1,973
Karluk	Karluk	465	1,463	1,716	1,508	1,149	1,130	1,497	1,113	1,283	1,080	971
Katmai N.P.	Lake Brooks			3,500	3,000	3,552	2,500	1	1,558	5,835	4,934	4,783
King Cove	King Cove	1,072	1,858	3,130	2,183	2,543	3,258	3,578	3,995	3,787	3,627	4,222
King Salmon	King Salmon	28,352	33,387	44,969	42,295	45,026	42,290	45,864	45,852	52,165	53,187	51,050
Kodiak	Kodiak	49,165	60,331	69,161	69,395	73,991	63,037	77,027	79,434	80,396	82,185	78,691
Kodiak	Kodiak (Lily Lake)	87	2,700				137					
Kodiak	Kodiak (Muni)	17					23					
Larsen Bay	Larsen Bay				2,305	2,585	2,361	2,562	2,593	3,003	2,443	2,299
Levelock	Levelock	782	853	528	494	939	686	730	812	1,067	1,225	1,365
Manokotak	Manokotak				523	15,379	1,321	4,486	4,482	2,758	3,404	1,951
Naknek	Naknek	4,532		1,241	765	1,551	1,464	1,839				
Naknek	Tibbetts								1,894	1,353	1,650	1,530
Nelson Lagoon	Nelson Lagoon	85	231	226	260	311	307	413	355	334	322	282
New Stuyahok	New Stuyahok	8,557	3,462	1,393	793	3,785	8,119	1,291	1,606	1,602	1,610	1,151
Nikolski	Ramos			178					127	124	60	
Nondalton	Nondalton	732	1,503	569	599	2,490	463	472	918	573	767	
Old Harbor	Old Harbor								3,255	3,260	3,384	2,816
Ouzinkie	Ouzinkie				1,511	1,730	1,838	2,171	2,403	2,166	1,943	1,265
Pedro Bay	Pedro Bay	459	531	242	447	590	561	479	680	335	333	385
Perryville	Perryville	276	235	314	301	460	733	745	701	740	795	701
Pilot Point	Pilot Point	1,236	1,002	747	964	1,630	1,191	1,324	1,304	1,288	1,482	1,146
Pilot Point	Ugashik Bay		7	109	410	245	189	154	159	230	226	185
Port Alsworth (p)	Port Alsworth	1,229	160	259	748	159	88	82	34	130	0	0
Port Heiden	Port Heiden	873	840	1,758	1,375	1,818	1,640	1,449	1,297	1,102	1,332	1,366
Port Lions	Port Lions	1,193	2,676	3,538	2,459	2,469	2,185	3,041	2,891	3,489	3,002	2,088
Port Moller	Port Moller AFS	281	755	314	297	924	428	420	298	438	449	
Portage Creek	Portage Creek	237	193	60	139	198	175	223	289	377	488	271
Sand Point	Sand Point	2,276	2,425	3,969	4,419	4,464	5,237	5,506	4,758	4,836	4,734	3,860
Shemya	Eareckson AS	6,763	5,818	4,001	5,443	4,983	4,437	7,363	6,329	6,440	1,515	
South Naknek	South Naknek nr 2	3,921	7,327	1,876	465	1,412	1,143	1,817	1,387	1,896	1,985	1,478
St George	New St George								1,383	1,214	996	1,000
St Paul Island	St Paul Island	3,402	3,105	3,432	4,817	4,767	5,927	5,321	5,494	5,969	5,352	4,963
Togiak Village	Togiak	7,599	5,555	3,443	2,943	12,123	3,166	6,666	5,174	4,948	5,834	
Twin Hills	Twin Hills	169	482	230	204	2,214	263	718	734	632	840	716
Ugashik	Ugashik (new)				51	6	6	16	360	359	301	
Unalaska	Unalaska	10,856	16,061	26,175	30,614	44,127	39,206	52,903	40,400	40,930	37,606	36,217

(p) = private.
Source: FAA.

Kodiak has consistently had the largest number of enplaned passengers since 1986, averaging over 70,000 enplanements during that time period. Enplanement growth at King Salmon has been consistent and that airport has become the second busiest airport in the region in terms of enplanements over the past several years. Exhibit 4.12 depicts the growth in enplanements at the larger hub airports in the region.

Exhibit 4.12
Enplaned Passengers at Southwest Alaska
Hub Airports – 1986-1995

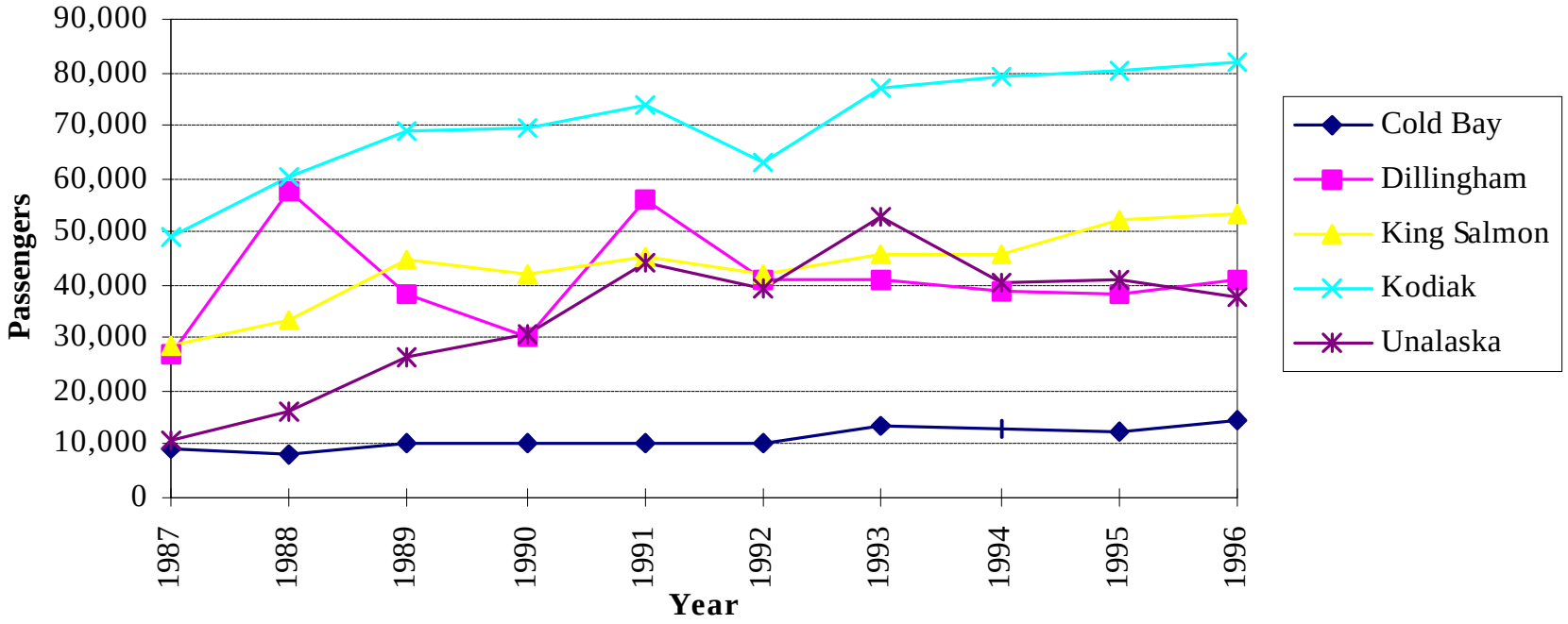


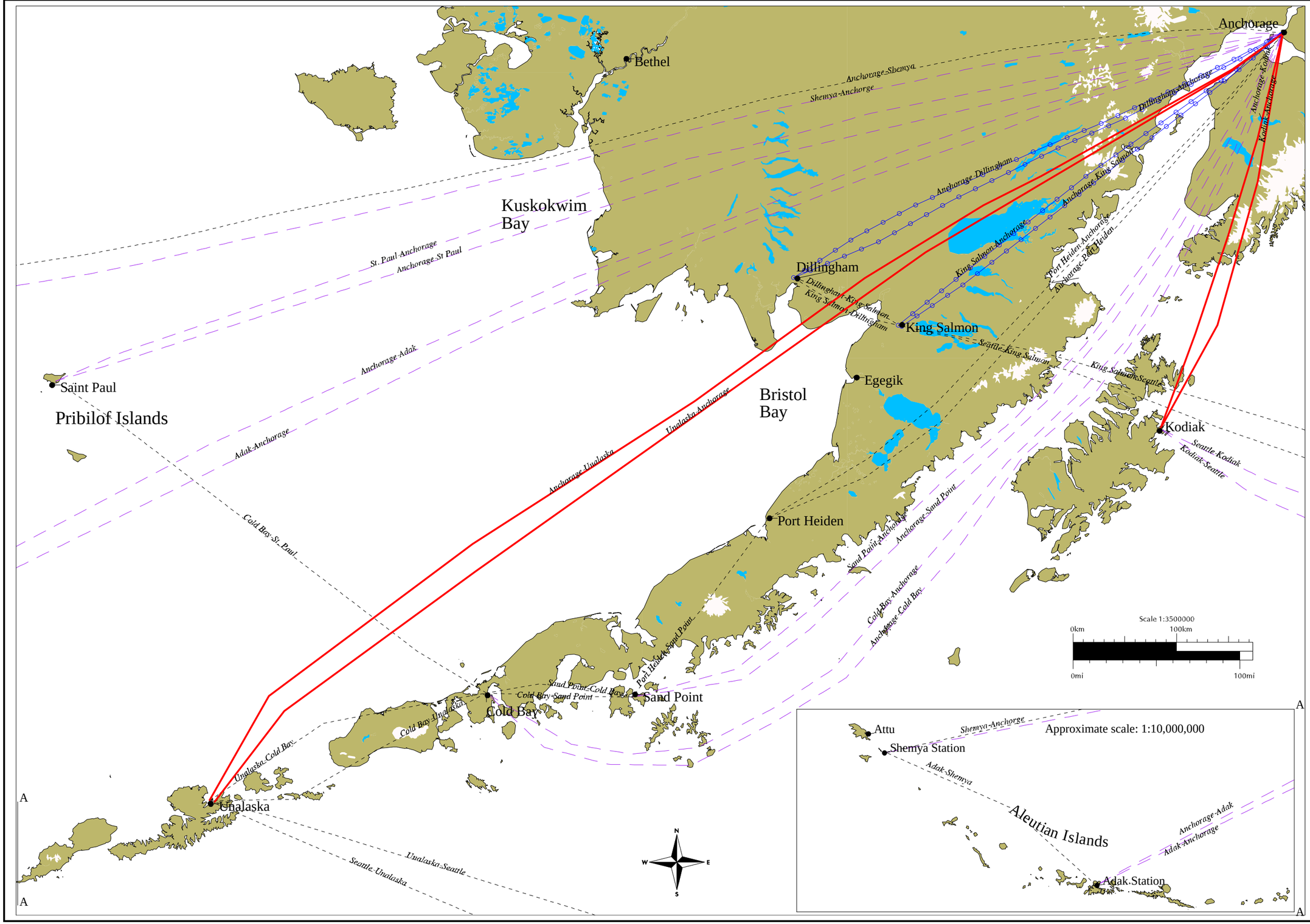
Table 4.35 shows the breakdown in enplanements between large certificated air carriers (main line) and small certificated, commuter, and air taxi enplanements at the larger airports in the region. With the bankruptcy of MarkAir, the only large certificated carriers currently serving passenger travel in the region are Alaska Airlines and Reeve Aleutian Airlines. Of note is the shift that has occurred in enplanement activity from large certificated carriers to small certificated, commuter, and air taxi carriers. In fact, large certificated enplanements have decreased at many airports. This shift can be likely attributed to the economics of the aviation market in Southwest Alaska. Small certificated carriers have been able to cut costs, and thus ticket prices, because they operate smaller, more efficient planes. The smaller certificated operators also have less overhead and can operate at a lower profit margin because their operations are small and efficient. In fact, because of the extreme competition in the market, small carriers must operate under a narrow profit margin to be competitive. The Southwest Alaska aviation market is so elastic that even a small drop in ticket prices influences people's carrier choice. The narrow profit margins and competition keep fares down but also make the market volatile, as evidenced by carriers entering and exiting markets and going out of business.

Table 4.35
Southwest Alaska Enplanements
Large Certificated (Main Line) vs. Small Certificated Commuter/Air Taxi At Airports with Scheduled Service and 2,500 or More Passengers Enplaned – 1990-1995

	Cold Bay		Dillingham		King Salmon		Kodiak		Sand Point		St. Paul Island		Unalaska	
Year	ML	SC	ML	SC	ML	SC	ML	SC	ML	SC	ML	SC	ML	SC
1990	6,290	4,085	16,405	39,377	21,122	23,904	46,917	27,074	3,867	597	4,240	527	34,112	10,015
1991	5,787	4,698	12,279	28,679	17,757	24,533	32,536	30,501	3,598	1,639	5,270	657	26,390	12,816
1992	7,091	6,361	11,232	29,561	19,824	26,040	12,429	64,598	3,992	1,514	4,049	1,272	30,906	21,997
1993	7,088	5,958	11,929	26,897	18,777	27,075	17,363	62,071	3,832	926	3,561	1,933	27,311	13,089
1994	6,454	5,919	10,559	27,910	17,830	34,335	17,754	62,642	3,020	1,816	4,117	1,852	27,319	13,611
1995	9,017	5,702	9,131	32,096	16,119	37,068	22,839	59,346	3,278	1,456	3,384	1,968	25,436	12,143
1996	6,150	4,686	11,225	26,251	17,562	33,488	24,473	54,211	3,330	530	3,698	1,265	26,596	9,621

ML= Main Line, Large Certificated SC= Small Certificated Commuter/Air Taxi Source: FAA DOT/TSC ACAIS Database (Report V3P)

In general, the large certificated carriers feed the major hub airports to and from Anchorage and the small certificated, commuter, and air taxi carriers operate out of the hub airports providing service to the outlying areas. Average volumes of passengers flying on certificated route air carriers are depicted in Figure 5 and small certificated, commuter, and air taxi travel volumes are shown in Figure 6. It should be noted that volumes in Figure 5 are origin-destination specific and therefore indicates the direction of the flow of traffic. For the most part, links between communities have very similar volumes. This reflects a round-trip travel pattern, meaning that when people leave for a destination they typically make the same return trip. Data for small certificated, commuter, and air taxi carriers (Figure 6) are not reported as origin-destination specific. The volumes that are reported indicate the volume of that link, not the direction. The origin and destination on the map indicates the points at which the passengers enter and leave the system of an air carrier on a one-way trip or on each of the directional parts of a round or circle trip, ignoring intermediate transfer points. Origin-destination combinations with less than 100 passengers per year are not shown.



TRANSPORTATION & PUBLIC FACILITIES • STATE OF ALASKA •

HDR Alaska

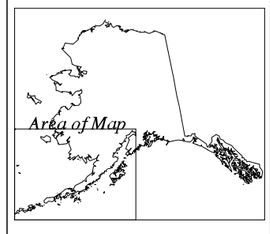
PB 100 YEARS

File:	Date:	By:
pascert01.aml	11/11/97	PKW

Legend

Average Passengers per Year

- between 100 and 999
- between 1,000 and 9,999
- between 10,000 and 19,999
- more than 20,000



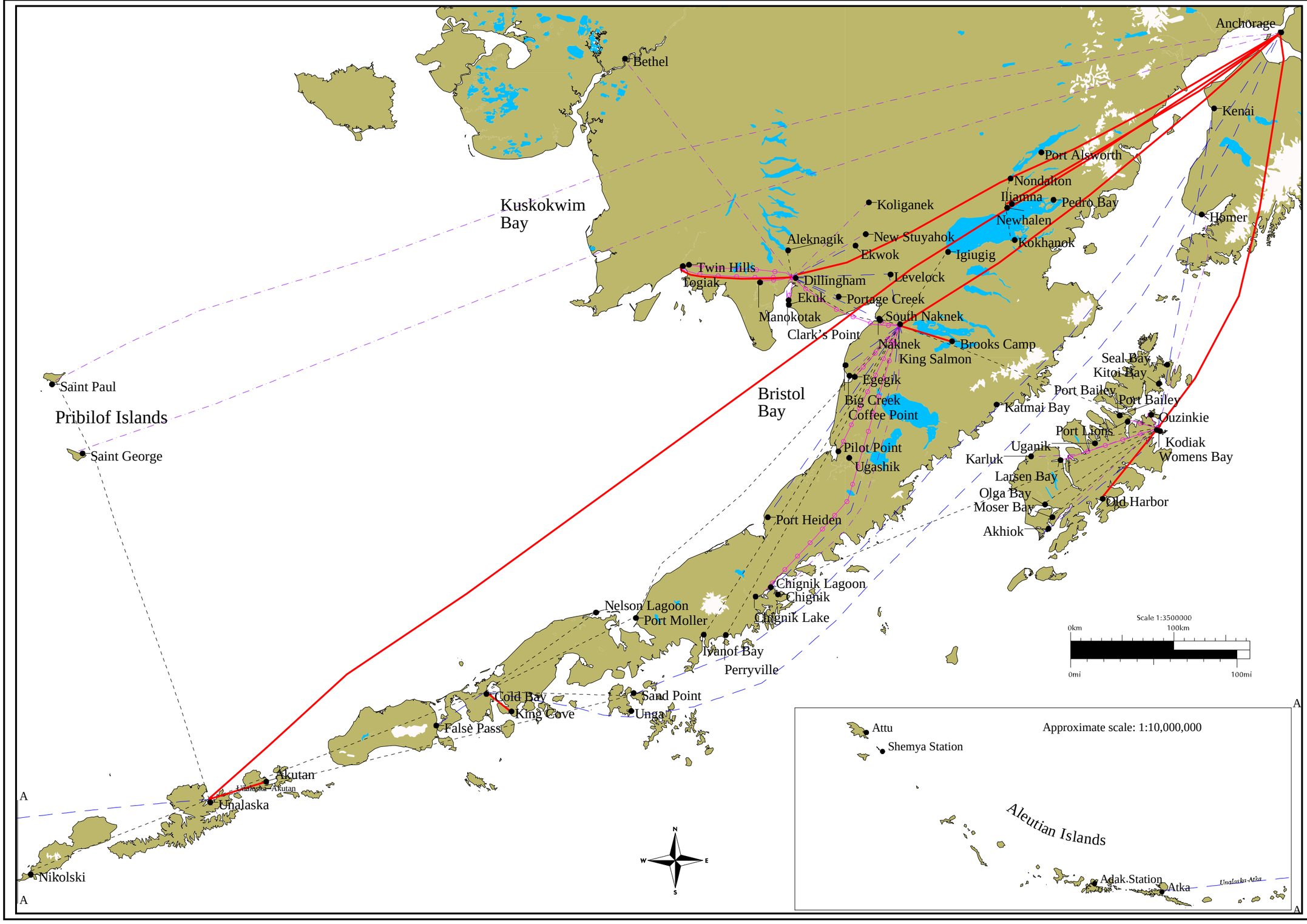
Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers

Air Passenger Movements
Large Certificated Carriers

Southwest Alaska Transportation Plan

Existing Conditions Technical Memorandum

FIGURE 5



TRANSPORTATION & PUBLIC FACILITIES • STATE OF ALASKA •

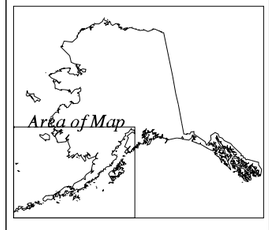
HDR Alaska | PB 100 YEARS

File:	Date:	By:
pascom01.aml	11/11/97	PKW

Legend

Average Passengers per Year

- *between 100 and 499*
- *between 500 and 999*
- *between 1,000 and 1,999*
- *between 2,000 and 3,999*
- *more than 4,000*



Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers

Air Passenger Movements
Small Certificated Carriers

Southwest Alaska Transportation Plan

Existing Conditions Technical Memorandum

FIGURE 6

The Anchorage–Unalaska trip is the largest volume passenger trip that occurs in the Southwest region, averaging over 25,000 per year. This is followed closely by the Anchorage–Kodiak route. The Anchorage–Kodiak route is by far the largest small certificated route in the system averaging around 90,000 passengers per year. The Anchorage–King Salmon and Anchorage–Dillingham are the next largest of the small certificated routes, averaging 31,000 and 26,000 respectively. The maps visually display the hub and spoke aviation system. In general, passengers travel to and from hubs via the large certificated carriers, particularly when traveling to Anchorage. The small certificated carriers provide passenger service to the outlying communities and provide some important connections between regional hubs.

AVIATION PASSENGER COSTS

Air travel to the region, characterized by long distances and low volumes, is expensive. Table 4.36 shows typical passenger rates between representative city pairs. These rates are the current fares as of December 1997. Fares can vary depending on the air carrier and season.

Table 4.36
Typical Passenger Rates Between
Representative City Pairs (1997 Dollars)

City Pairs	Distance (mi.)	One Way	Round Trip
Anchorage–Dillingham	329	$155	$320
Anchorage–Cold Bay	621	$350	$700
Anchorage–Iliamna	195	$120	$245
Anchorage–King Salmon	289	$155	$315
Anchorage–Kodiak	252	$110	$325
Anchorage–St. Paul	767	$390	$780
Anchorage–Unalaska	792	$350	$700
Dillingham–King Salmon	71	$60	$120
Dillingham–Togiak	67	$50	$100
Dillingham–Clarks Point	14	$20	$40
Dillingham–New Stuyahok	50	$33	$66
King Salmon–Chignik	176	$170	$345
King Salmon–Port Heiden	140	$120	$240
King Salmon–Igiugig	52	$60	$120
King Salmon–Egegik	42	$60	$120
Kodiak–Ouzinkie	11	$30	$60
Kodiak–Old Harbor	49	$50	$100
Kodiak–Larsen Bay	58	$60	$120

Source: Compiled by HDR.

Air Freight Movements

This section contains information on the amount of cargo and mail shipped by air for the Southwest Alaska region as reported by air carriers. While air total freight volumes are small in comparison to marine transportation, cargo shipped by air is typically time-sensitive. For example, perishable grocery items enter the region via large certificated air carriers and are redistributed by smaller carriers. Likewise, the fresh fish market relies on the air distribution system to get fresh fish to markets in Seattle and Japan. Table 4.37 reports the volume of freight and mail activity enplaned by large certificated route air carriers while Table 4.38 reports the volume of freight activity outbound and inbound at selected commuter hub airports flown by small certificated and commuter carriers.

Table 4.37
Certificated Route Air Carrier – Enplaned Freight (tons)

Airports	1987		1988		1989		1990		1991		1992		1993		1994		1995	
	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail
Adak	352	207	196	162	344	276	413	498	734	443	1,424	207	1,513	225	1,515	188	773	129
Amchitka	0	0	9	0	27	27	24	3	5	10	45	0	168	15	0	0	0	0
Cold Bay	161	89	85	53	105	127	287	133	232	66	235	165	247	128	309	85	237	91
Dillingham	606	162	686	172	989	199	902	233	6,060	215	1,271	164	2,490	175	1,325	212	955	276
Iliamna	119	17	127	15	125	10	176	13	6,581	11	144	18	193	20	175	23	155	21
King Cove	55	0	10	0	38	0	0	0	12	0	53	0	89	0	58	0	50	0
King Salmon	2,007	138	2,051	138	3,013	146	6,194	187	12,803	200	1,314	180	1,688	183	1,511	183	1,137	585
Kodiak	1,274	322	1,962	351	1,644	400	1,934	388	1,627	185	1,484	116	853	84	1,608	49	2,743	58
Port Heiden	225	28	90	16	75	20	198	28	97	24	32	24	12	15	184	19	62	14
Port Moller	11	0	0	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0
St. George	87	5	68	5	45	6	45	6	22	5	48	5	65	5	76	7	59	9
St. Paul	191	38	227	33	200	38	111	41	109	36	141	37	206	32	155	41		
Sand Point	86	37	32	32	47	75	77	65	141	72	158	67	104	67	127	49		
Shemya	159	122	240	92	412	151	489	138	769	116	789	87	1,058	63	836	56	856	13
Togiak	578	0	359	1	160	0	101	0	28	0	21	0	26	0	414	0		
Unalaska	334	83	750	97	830	127	902	233	969	147	983	146	1,176	129	1,349	123	1,311	165

Source: FAA/BTS – Airport Activity Statistics of Certificated Route Air Carriers.

Table 4.38
Small Certificated and Commuter Air Carrier Freight Activity at Commuter Hub Airports Outbound and Inbound Freight (tons)

Hub Airport	1988		1989		1990		1991		1992		1993		1994		1995		1996	
	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail	Cargo	Mail
Cold Bay	25	232	N/A	N/A	52	226	71	297	143	355	117	474	106	356	95	347	104	154
Dillingham	125	816	178	1,072	213	988	414	981	433	1,360	320	1,574	321	1,876	319	2,803	221	2,120
King Salmon	115	403	100	578	195	616	380	539	371	691	232	818	277	770	238	1,259	242	806
Kodiak	758	375	432	210	527	280	593	686	944	726	1,026	791	1,067	1,164	1,083	1,111	561	1,063

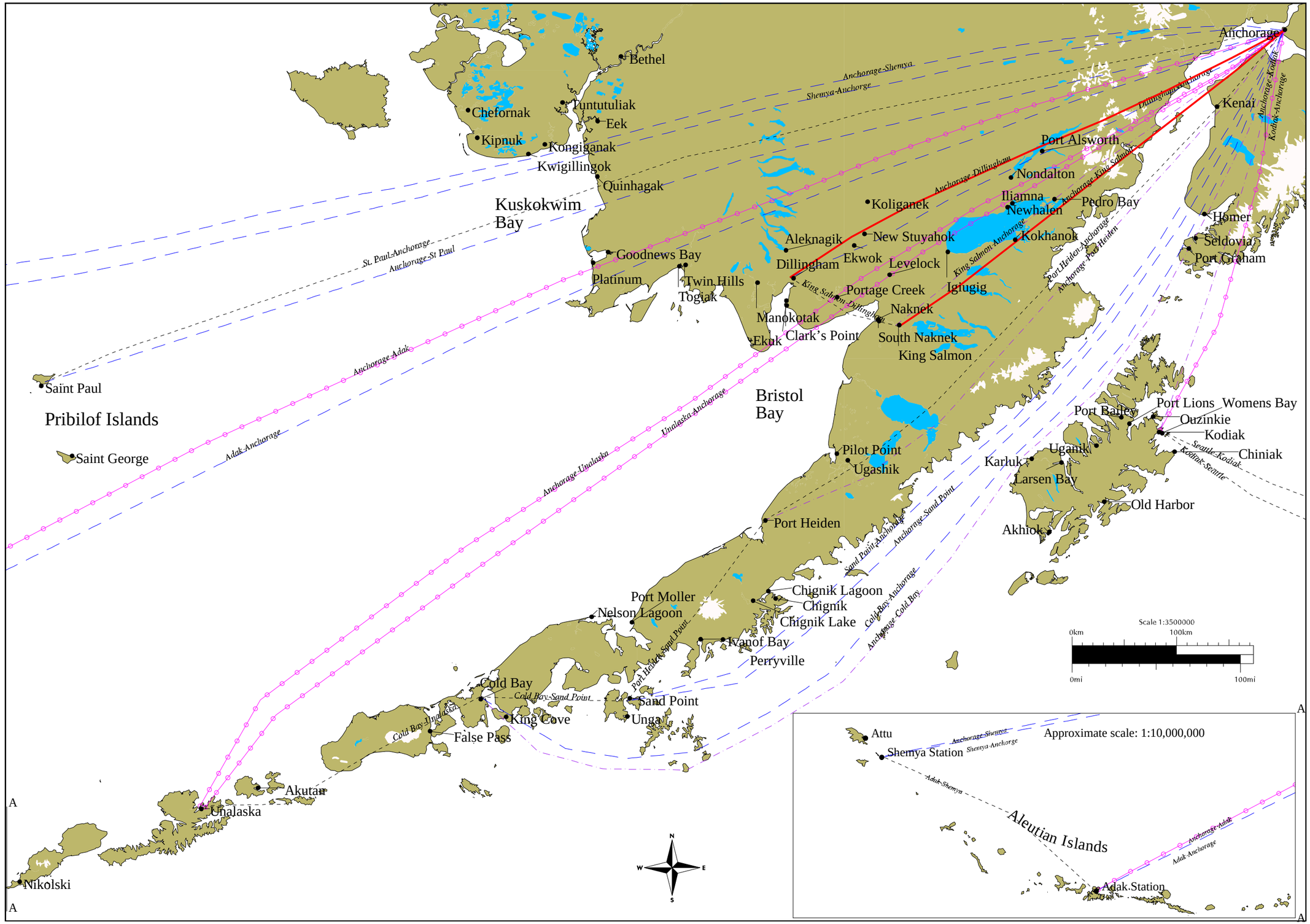
Source: FAA/BTS Commuter Air Carrier Activity.

A significant portion of the Southwest Alaska aviation activity can be attributed to the mail service provided by the U.S. Postal Service (USPS). As these tables indicate, a large volume of freight is distributed through the mail system by carriers under contract with the USPS at rates subsidized by the USPS. The subsidy results because the USPS is mandated to provide mail service throughout the nation at uniform rates. Unable to charge higher rates in Alaska, where costs of delivery, especially to rural areas are considerably higher, the USPS Alaska costs exceed the postage revenue. The USPS also operates under a requirement to provide competitive service frequencies. To handle a share of the mail, carriers are required to fly more frequently than they likely would if they were only flying passenger service. Because most carriers fly a combination of mail and passengers, passenger service is also somewhat more frequent than it would otherwise be.

In Alaska, mail is divided into categories for payment purposes and service priority. Priority mail consists of express mail (overnight service) and priority parcels (2-day delivery), while the remainder is non-priority (4-7 days). However, it is notable that "overnight" service in Alaska is usually at least two days, even in Juneau. In Southwest Alaska, the USPS disperses mail through postal hubs at Cold Bay, Dillingham, Iliamna, King Salmon, Kodiak, Port Heiden, Sand Point, St. Paul, St. George, and Unalaska. Non-priority mail consists of parcel post mail and bypass mail.

Parcel post mail is routed through the normal mail delivery system at the post office, while bypass mail actually skips (bypasses) official postal facilities. Bypass shippers who have applied with the USPS can bring their mail directly to an air carrier's facility and can ship goods directly through the carrier at the parcel post rate. Requirements are the same as for any other mailed item; no hazardous materials, the weight is restricted to 70 pounds and the total length of the package is limited to 108 inches. Bypass mail typically originates in Anchorage, is weighed at the airport by USPS employees, affixed with postage, shrink-wrapped on pallets, and flown by mainline carriers to the communities acting as postal hubs. Main line service is provided by Alaska Airlines, Reeve Aleutian, Southern Air Transport, and Northern Air Cargo. From the hub airports, regular and bypass mail is broken down and transferred to smaller commuter carriers that serve the outlying communities. Bypass mail is principally used to ship wholesale goods to retail stores such as groceries and consumer goods.

Figures 7 and 8 graphically depict the average volumes of cargo and mail shipped between the given origins and destinations per year over the past several years. The certificated volumes are origin-destination specific, while the smaller certificated and commuter volumes show just the volume transported between points, regardless of origin and destination. It can be assumed, however, that the majority of the volume is transported from the hub outward to the spoked destinations. The highest volumes flown via large certificated carriers are from Anchorage to Dillingham (2,000 tons/year) and then King Salmon (1,500 tons per year). The Anchorage–Kodiak route is the largest small certificated freight trip in terms of weight at 1,400 tons per year. The maps in combination clearly show the hub and spoke aviation system at work. Large certificated carriers transport freight to the hub airports where it is redistributed to the outlying communities by the small certificated carriers. The exception being the Anchorage–Kodiak route, where the small certificated carrier volumes are actually higher than the large certificated carriers'.



TRANSPORTATION & PUBLIC FACILITIES • STATE OF ALASKA •

HDR Alaska

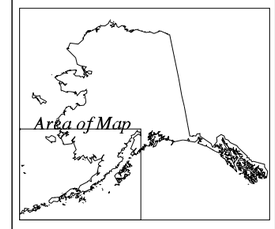
PB 100 YEARS

File:	Date:	By:
frtcert01.aml	11/11/97	PKW

Legend

Average Freight Tons per Year

- *between 10 and 99*
- *between 100 and 499*
- *between 500 and 999*
- *between 1,000 and 1,499*
- *more than 1,500*



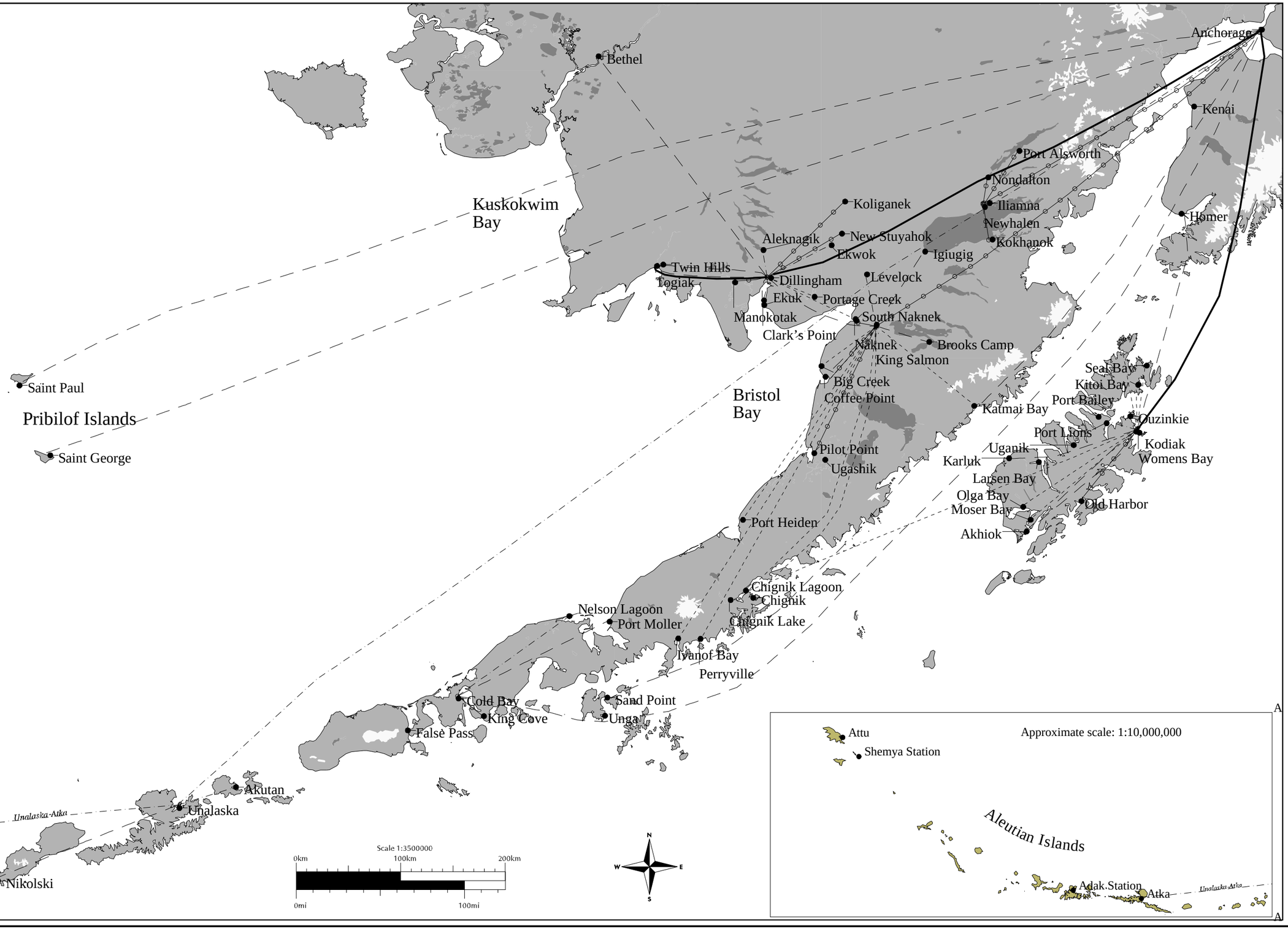
Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers

Air Freight Movements
Large Certificated Carriers

Southwest Alaska Transportation Plan

Existing Conditions Technical Memorandum

FIGURE 7



TRANSPORTATION & PUBLIC FACILITIES • STATE OF ALASKA •

HDR Alaska

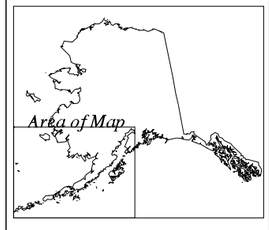
PB 100 YEARS

File:	Date:	By:
frtcom01.aml	11/11/97	PKW

Legend

Average Freight Tons per Year

- *between 1 and 9*
- *between 10 and 49*
- *between 50 and 99*
- *between 100 and 499*
- *more than 500*



Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers

Air Freight Movements
Small Certificated Carriers

Southwest Alaska Transportation Plan

Existing Conditions Technical Memorandum

FIGURE 8

FREIGHT RATES

Table 4.39 indicates current typical freight shipment rates between Anchorage and hub cities for freight, priority mail, and parcel post (Bypass) mail. Using non-priority parcel post and bypass mail, rural residents receive a considerable savings, actually shipping goods at below cost. Looking at the freight rates, it is not surprising that so much of the rural cargo is shipped via the USPS.

Table 4.39
Typical Air Freight and Mail Rates
Between Representative City Pairs ($/Pound)

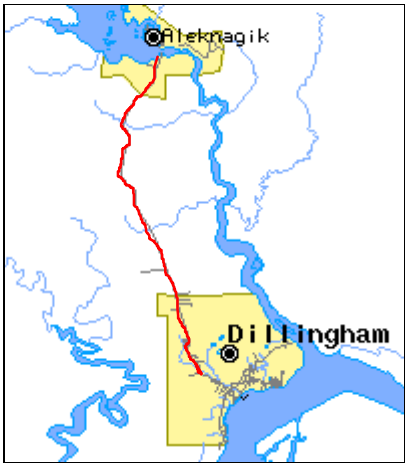
City Pairs	Distance (mi.)	Freight Rate		USPS Priority Mail 2 days			USPS Parcel Post (Bypass) Mail 4-7 Days		
		1lb-100lb	100lb-499lb	1lb	10lb	70lb (limit)	1lb	10lb	70lb (limit)
Anchorage–Dillingham	329	.70	.50	10.00	1.00	.48	2.31	.31	.08
Anchorage–Iliamna	195	.45	.34	10.00	1.00	.48	2.31	.31	.08
Anchorage–King Salmon	289	.70	.50	10.00	1.00	.48	2.31	.31	.08
Anchorage–Kodiak	252	.70	.49	10.00	1.00	.48	2.31	.31	.08
Anchorage–St. Paul	767	1.07	.97	10.00	1.00	.48	2.31	.31	.08
Dillingham–Anchorage	329	.45	.32	10.00	1.00	.48	2.31	.31	.08
Iliamna–Anchorage	195	.35	.32	10.00	1.00	.48	2.31	.31	.08
King Salmon–Anchorage	289	.45	.32	10.00	1.00	.48	2.31	.31	.08
Kodiak–Anchorage	252	.45	.34	10.00	1.00	.48	2.31	.31	.08
St. Paul–Anchorage	767	.69	.58	10.00	1.00	.48	2.31	.31	.08

4.3 LAND TRANSPORTATION

There are few roads that connect communities in the Southwest Alaska Region. The few roads that do connect communities are shown in Figure 9, namely, the Dillingham–Aleknagik Road, the King Salmon–Naknek Road, the Newhalen–Iliamna Road, the Pile Bay–Williamsport Road, the Iliamna–Nondalton Road, and several roads on Kodiak Island. This section describes each of these roads. Table 4.40 summarizes Annual Average Daily Traffic on the segments for which there is information. No published information on freight volumes is available. What is known about freight traffic is described within each paragraph. Not all land travel is made on roads, especially during the winter, when snow-machines are often used on trails, particularly by residents of small communities, such as Togiak. The issue of identifying and signing of such trails has been raised insofar as rescue operations to save lost snow-machine travelers are quite expensive.

Dillingham–Aleknagik Road

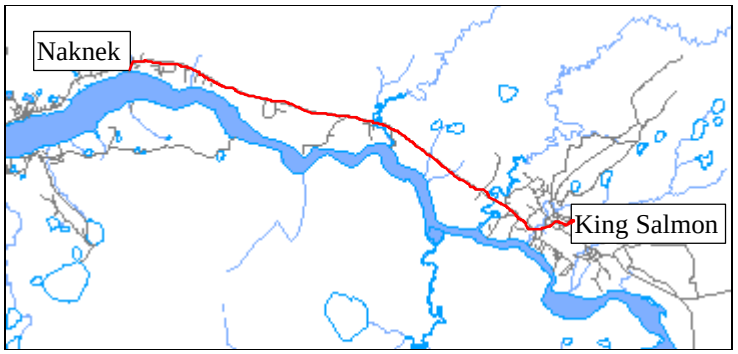
Aleknagik is the only regional village with a road link to Dillingham. The road runs 23.3 miles northwest from Dillingham and connects to Lake Aleknagik's south shore. The north shore of the lake is not road accessible. The road is maintained year round by the DOT& PF. The road was built in 1960 and is surfaced with dirt and gravel. The first three miles of the roadway are classified as rural major collector with the remainder of the route into Aleknagik classified as rural minor collector. The road is also a secondary federal aid route. For the first eight miles there are two nine foot lanes with no shoulders, the remainder of the route consists of two 10-foot lanes. There are approximately 11 culvert crossings on the route. The DOT&PF has made substantial improvements to this road recently. Minor realignment and the application of an asphalt-treated base was being advertised for construction as this document went to press in February 1998. Table 4.40 summarizes annual average daily traffic on the road.



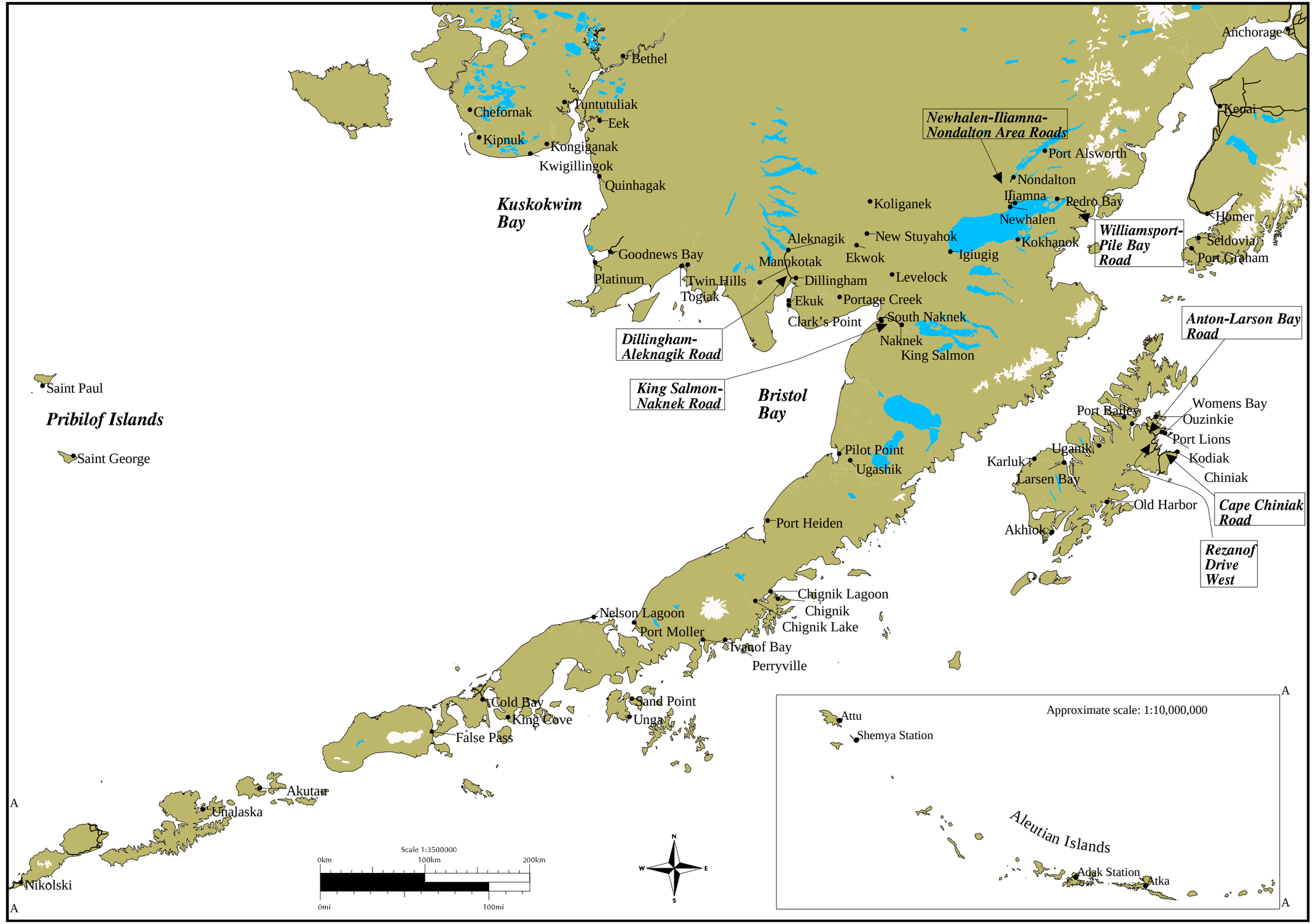
Source: U.S. Census Tiger Files.

King Salmon–Naknek Road

The King Salmon–Naknek Road provides an important connection between King Salmon and Naknek. Over the years, Naknek has developed into a major center for the Bristol Bay commercial sockeye salmon fishery. In fact, during the summer months, the population swells to about 5,000, most of whom are fishermen and cannery processor workers that arrive via the airport in King Salmon and use the road to access canneries in Naknek. The road, which is maintained year round, is also used to transport millions of pounds of salmon to King Salmon, where the fish are flown to outside destinations. The functional class is rural major collector and the road is also a secondary federal aid route. The road has two 14-foot lanes paved with a bituminous treated surface. Each lane has a 2-foot graded and drained shoulder. Over the course of the 15.5 mile road there are three bridge crossings: one at Leader Creek, one at Paul's Creek, and one at King Salmon Creek. Table 4.40 summarizes annual average daily traffic on the road



Source: U.S. Census Tiger Files.



TRANSPORTATION & PUBLIC FACILITIES • STATE OF ALASKA •

HDR Alaska | PB 100 YEARS

File:	Date:	By:
swroads01.aml	10/22/97	PKW

Legend

Existing Roads

Area of Map

Data Sources:
Alaska Department of Labor
Alaska Department of Natural Resources
Alaska Department of Transportation
Federal Aviation Administration
US Army Corps of Engineers

Existing Roads
Southwest Alaska Transportation Plan
Existing Conditions Technical Memorandum
FIGURE 9

Newhalen–Iliamna–Nondalton Area Roads

NEWHALEN–ILIAMNA ROAD

The Newhalen Village Road connects to the Iliamna Village road to link these two communities. The Newhalen Village Road runs northeast out of Newhalen 2.75 miles to its intersection with the Iliamna Village Road. The road is classified as a rural major collector. The road, which consists of two graded and drained 12-foot earth lanes without shoulders, is in good condition and is maintained year round. The road consists of two graded and drained 12-foot earth lanes without shoulders and is in good condition. From the intersection the link continues on the Iliamna Village Road. The Iliamna Village road runs from the airport to community. It is also a rural major collector, but has two 9-foot lanes with no shoulder. There is one bridge crossing at Roadhouse Creek.

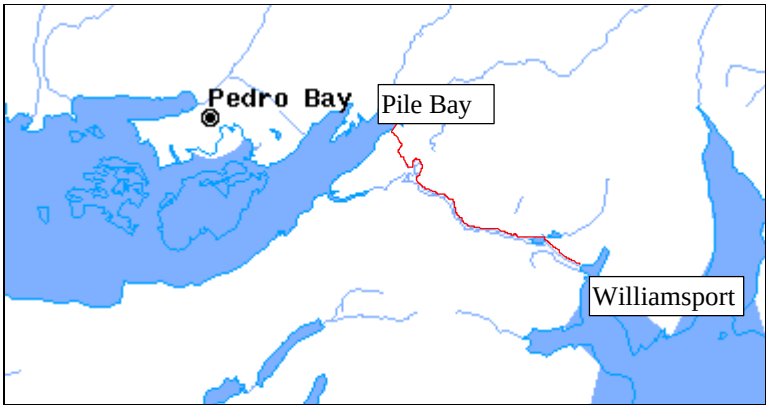
Source: U.S. Census Tiger Files.

ILIAMNA–NONDALTON ROAD

When completed the Iliamna–Nondalton would be 16.2 miles long. During the 1980s 13 miles of pioneer road was built from Iliamna to a planned bridge crossing on the Newhalen River, three miles short of Nondalton. The first three miles of the road, beginning at the Iliamna Airport, going north, are traveled frequently and are well maintained. The road in this segment has two twelve foot gravel lanes. The next six miles follow the Newhalen River and are less traveled, and in fair condition. This segment is in need of widening and re-grading for improved drainage. From mile nine to the river, the road is truly of pioneer construction with few culverts or drainage improvements and is need of reconstruction. The three miles on the Nondalton side of the river were cleared of trees at one time but no construction was completed. The road was originally planned to function as a rural collector, carrying 250-400 vehicles per day, on a 20 foot-wide roadway surface with 2-foot shoulders. This road is maintained year round.

Williamsport–Pile Bay Road

The Williamsport–Pile Bay Road is important because it connects lower Cook Inlet with the communities along Iliamna Lake as well as providing access to the commercially navigable water route to Bristol Bay, Dillingham, and Naknek/King Salmon. Historically, the road has been used to transport fishing of the Bristol Bay gillnet fleet between Homer and Bristol Bay. Traveling between Homer and



Source: U.S. Census Tiger Files.

Bristol Bay using the Williamsport–Pile Bay Road allows fishers a safer, quicker route than traveling by water around the Alaska Peninsula. Some freight and construction equipment are also transported via this route. Bypassing the Alaska Peninsula saves considerable amount of time and money and allows safer passage.

The Williamsport–Pile Bay Road is 15.5 miles long, consisting of one graded and drained earth travel lane with no shoulder. The existing road climbs to an elevation of 850 feet in the first two miles up the Williams Creek Valley to Summit Lake. This portion of the road traverses steep rock slopes. From Summit Lake, the road gradually descends westward along the north side of Chinkelyes Creek, crosses the Iliamna River and ends at Pile Bay village on Iliamna Lake. The road is in poor condition and is maintained only during summer months when a maintenance constructor is available. Portions of the road do not meet the minimum width standards and are too narrow for the current capacity and usage. The four bridges along the project corridor are in dire need of repair or replacement. They are narrow and restrict oversized traffic. All of the bridges have sufficiency ratings below 50 and one of them has washed out (Chinkelyes Creek) and been dismantled. The major limitation restricting boat-haul traffic is the existing metal bridge across the Iliamna River, which has an interior dimension of only 12 feet; not wide enough for the typical gillnet boat.

Kodiak Island Roads

CAPE CHINIAK ROAD

The 11.83 mile long Cape Chiniak Road connects Chiniak with Kodiak (via Rezanof Drive West). The Cape Chiniak Road is classified as a rural minor collector. The road consists of two unpaved, gravel, 12-foot lanes with no shoulders. The road is 12 miles long from its junction with Rezanof Drive West to Chiniak and is maintained year round.

Source: U.S. Census Tiger Files.

REZANOF DRIVE WEST–ANTON LARSEN BAY ROAD

Starting at the intersection with the Cape Chiniak Road, for 20 miles northwest toward Kodiak, Rezanof Drive West is classified as a rural major collector and consists of two 16-foot gravel lanes with no shoulder. Near the boundary of the urban area, the road is covered with a bituminous surface and consists of two 12-foot lanes with two-foot shoulders. At the junction with Boy Scout Lake Road the functional class is urban collector, and shortly becomes an urban minor arterial as it continues toward Kodiak. At the junction with the airport terminal road it becomes part of the National Highway System for a couple of miles. Near the Buskin River Bridge (mile 25.24) the road becomes Anton Larsen Bay Road. The Anton Larsen Bay Road serves as a rural minor collector and is not a part of the National Highway System. The road, maintained year round, is two lanes of gravel as it heads north toward Anton Larsen Bay (12.3 miles).

Table 4.40
Annual Average Daily Traffic on Southwest Region Roadways for Which Data are Available

Description	Length (mi.)	FC*	1991	1992	1993	1994	1995	1996
Dillingham–Alegnagik Road	**23.3**							
Jct. with Seward Street	1.46	7	3,780	3,780	3,780	3,954	4,000	4,000
Jct. with Wood River Spur	1.32	7	3,460	3,460	3,460	3,303	3,400	3,400
Jct. with Dillingham Airport Road	0.24	7	2,440	2,440	2,440	2,565	2,600	2,600
Jct. with Kanakanak Spur	1.83	8	1,530	1,530	1,530	1,886	1,900	1,900
Jct. with Floodplain Road	2.14	8	1,250	1,250	1,250	1,540	1,600	1,600
Jct. with unnamed road	15.68	8	360	360	360	430	450	450
Jct. with unnamed road	0.63	8	360	360	360	350	350	350
King Salmon–Naknek Road	**15.45**							
Jct. with Naknek Lake Road	0.96	7	821	840	840	840	840	840
Milepost 1	11.98	7	407	540	540	540	540	540
King Salmon Creek	1.20	7	1,062	1,060	1,060	1,060	1,060	1,060
Jct. with King Salmon River Road	1.31	7	574	570	570	570	570	570
Kodiak–Chiniak–Womens Bay								
Cape Chiniak Road	**11.83**	8	120	120	120	120	161	160
Rezanof Road West	**23.64**							
Jct. with Pasagshak Road	9.63	7	260	270	270	280	277	270
Jct. with Saltery Cove Road	9.36	7	1,321	1,370	1,370	330	354	340
Jct. with road east of Salonie Cr.	4.65	7	**N/A	N/A	N/A	1,430	1,928	1,870

** FC (Functional Class) 7 = Rural Major Collector; 8 = Rural Minor Collector.*
*** Data were not broken out separately for the roadway segment from Kodiak to the road east of Salonie Cr. until 1994.*
Source: ADOT&PF Central Region Traffic Volume Report.
Note: Published data not available for the Newhalen–Iliamna Road, Iliamna–Nondalton Road, or Pile Bay–Williamsport Road.

4.4 VISITOR TRAVEL

This section describes existing tourism, travel, and tourism trends in Alaska statewide, and in Southwest Alaska more specifically. Although Southwest Alaska offers substantial tourist resources, relatively few out of state visitors include Southwest Alaska on their itineraries. However, given that travel to Alaska is growing, it may be possible for the Southwest region to capitalize on the growing presence of visitors statewide. In essence, the region may wish to tap into the market opportunity that exists among visitors who have already committed to the energy and expense of traveling to other parts of the state. For this reason, trends in out-of-state travel to Alaska statewide are covered first. A discussion of tourism trends and opportunities in Southwest Alaska follows.

Statewide Tourism

Table 4.41 reflects the steady growth in out-of-state travel to Alaska with the greatest gains between 1990 and 1994, when annual growth reached eight percent per year.

Table 4.41
Total Out-of-State Visitors to Alaska – 1980-1997

Year	Visitors	Annual Growth	Average Annual Growth
1980	500,000		
1985	725,000		1985-89:
1989	808,600		4%/year
1990	880,000	9%	
1991	925,300	5%	1990-94:
1992	900,000	-3%	8%/year
1993	1,047,000	16%	
1994	1,121,000	7%	
1995	1,166,000	4%	
1996	1,200,000	3%	1995-present:
1997*	1,250,000	4%	4%/year

Source: AVA Overview of the Visitor Industry, 1997.

Trip Purpose and Season

Eighty percent of travelers visit Alaska between May and September. However, off-season trips are increasing, although not as fast as May-September trips. Out-of-state travel is classified into five trip purposes (Table 4.42). The classification “vacation/pleasure” is the most prevalent by far; it accounted for 56 percent of out-of-state trips to Alaska between 1989 and 1994.

Table 4.42
Out-of-State Visitors by Trip Purpose and Season – 1985-1994

	1985-86		1989-90		1993-94	
	Summer	Winter	Summer	Winter	Summer	Winter
Vacation/Pleasure Visitors	272,600		331,200	21,800	510,300	28,200
Visiting Friends/Relatives	77,200		82,500	38,000	78,000	40,800
Business and Pleasure	36,800		46,000	28,400	44,700	19,000
Business Only	44,600		37,300	85,200	70,000	90,900
Seasonal Worker	17,600		15,200	5,000	10,100	4,600
Total Summer Visitors (all trip purposes)	448,800		513,500	178,400	713,200	183,500

Note: These figures are inconsistent with the figures in the previous table, due to changes made in the AVSP survey process since 1985.
Source: AVSP III Summer 93 Arrivals, Summary Table IV; AVSP III Winter Fall 93-94 Summary Table III.

KEY TRENDS IN OUT-OF-STATE TRAVEL TO ALASKA

Key trends in out-of-state travel to Alaska are summarized below.

Highway "Rubber Tire" Visitors

The percentage of travelers arriving in Alaska by car and/or ferry is small (15 percent) and falling. This is likely due to a decline in state marketing, often mediocre roadside services, and a trend toward shorter trips. Meanwhile, in-state RV rental companies are thriving.

International Visitors

International travelers make up a small, growing segment of the Alaska market (eight percent in 1993 with current estimates running to 10 percent). International travelers are particularly desirable because they tend to stay longer, spend more money than domestic travelers, and often seek out adventures off the beaten track. Over 50 percent of travelers to the Valley of 10,000 Smokes in Katmai, are international.

Average Age

The average age of the Alaska visitor has been decreasing (50 in 1985, 48 in 1993), but aging "baby boomers" will likely mitigate that trend. Stereotypes are changing-many older people are fit, energetic, and wealthy.

Trip Duration

The average out-of-state visitor trip to Alaska has grown shorter, reflecting nationwide trends. The average trip to Alaska is 10.2 days, down from an average of 12 in 1989.

Party Size

Although few families have visited Alaska historically, demand for family travel is growing around the world. Established tour companies, such as Maupintour, that once excluded children, are now actively seeking family business. The Alaska cruise industry is dropping prices, in part to broaden appeal to families. Multi-generational trips are also increasingly popular.

Visitor Mode of Entry

As shown in Table 4.43, cruise ship was the dominant entry mode for summer vacation/pleasure visitors to Alaska in 1993, followed by domestic airplanes. The percentage of vacation/pleasure visitors arriving by domestic air grew between 1985 and 1993, while the share of cruise ship and highway entry modes declined. This change reflected the growing popularity of cruises that end or begin by air, and growth in independent travel. More recently, the percentage of travelers entering by cruise boat is thought to have increased.

Table 4.43
Vacation/Pleasure Visitor Entry Mode

Mode	1985	1989	1993
Cruise Ship	49%	41%	42% (31%)
Domestic Air	31%	38%	41% (55%)
Highway	13%	11%	11% (9%)
Marine Highway	4%	6%	7% (4%)
International Air	2%	3%	3% (2%)

Source: ASVP 93 Arrivals, Table III-A; numbers in parenthesis are for all visitors (not just vacation/pleasure travelers).

Visitor Satisfaction

Surveys taken between 1985 and 1993 show a slight decline in visitor satisfaction, from very high to just slightly less. This small change is concentrated in younger, wealthier, independent males. Cruise/package visitors are currently the most satisfied with their trips.

Overview of Travel to Southwest Alaska

Southwest Alaska is the least visited of five major regions of Alaska, with six percent of total summer visitors (Table 4.44). Moreover, travel to Southwest Alaska fell as a percentage of all state travel between 1989 and 1993.

Table 4.44
Summer Out-of-State Visitors to Alaska by Region – 1985-1993

Region	Summer 1985 Visitors (% of Total State Visitors)	Summer 1989 Visitors (% of Total State Visitors)	Summer 1993 Visitors (% of Total State Visitors)
Southcentral	282,900 (66%)	356,400 (69%)	569,300 (68%)
Southeast	258,500 (60%)	307,700 (60%)	502,800 (60%)
Interior/North	189,000 (44%)	180,500 (35%)	295,100 (35%)
Denali	144,200 (33%)	175,200 (34%)	301,200 (36%)
Southwest	***29,200 (7%)***	***42,200 (8%)***	***47,100 (6%)***
Alaska Total	**431,200**	**521,100**	**836,900**

** The sum of visitors to each region exceeds the "Alaska Total" because some travelers visit more than one region; numbers in parenthesis are % of annual total.*

Source: ASVP 85,89, 93 Patterns.

SOUTHWEST ALASKA VISITOR CHARACTERISTICS AND TRENDS

Vacation/Pleasure Visitor Demographics

Visitors to Southwest Alaska stand apart from other regions of Alaska in many respects. Compared to the remainder of the state, Southwest visitors were:

- younger (48 years vs. statewide 50)
- more likely to be male (71 percent vs. 50 percent statewide)
- more likely to be employed (64 percent vs. 33 percent statewide)
- less wealthy (average income $53,100, lowest of 5 Alaskan regions)

Vacation/Pleasure Visitor Mode of Entry

As shown in Table 4.45, virtually all Southwest Alaska visitors entered and departed Alaska by air (domestic or international), which contrasts with other regions where cruise ship, highway, and ferry were most common. These figures emphasize the extent to which Southwest Alaska is not participating in the state's large, fast growing cruise/tour visitor market. (Statewide figures are shown in parenthesis for comparison.)

Table 4.45
Alaska Entry Mode of Southwest Visitors

Mode	1989	1993	(1993-Statewide)
Domestic Air	80%	77%	(41%)
Cruise Ship	2%	8%	(42%)
Highway	2%	6%	(11%)
Marine Highway	3%	3%	(4%)
International Air	14%	6%	(2%)

Source: AVSP 93 Patterns Table IV-H, Arrivals Table III-A; AVSP 89 Arrivals, Tables IV, V-B-1.

Vacation/Pleasure Visitor Travel Type

The tourist market can be subdivided into two primary segments: (1) independents and (2) package travelers. Independents make their own travel arrangements, most often while traveling. Package travelers, on the other hand, make and purchase their travel arrangements in advance. Table 4.46 shows the defining characteristics of these distinct market segments.

Table 4.46
Summer Vacation/Pleasure Travelers – Characteristics of Package and Independent Markets

Characteristic	Package Market	Independent Market
Age	55 years old	younger – 43 years old
Sex	47% male/53% female	more men than women (55% to 45%)
Employed	46% employed	more likely to be employed (58%)
Average Income	high	higher (>$60,000/yr/household)
Party Size	2.2 people	the same
Length of Stay	6.7 nights	stay longer (11.8 nights)
Repeat Visits	1 in 10 repeat	more likely to return (4 in 10 repeat)
Percent of AK Mkt.*	57% of visitors (fastest growing)	28% of visitors (and declining)
Profile	likes structure, socializing and group activity; "adventure with handrails"; minimum hassles	likes flexibility; gives up certainty and ease of travel arrangements for more customized, in-depth experience

** The additional 14 percent of the market is a hybrid – the independent-package market. "Inde-package travelers" have demographics between the package/independents, and stay longer and spend more than either group.*

Source: AVSP, Summer 93 Vacation/Pleasure Arrivals, Table III-B.

As shown in Table 4.47, Southwest Alaska has the highest percentage of independent travelers of any region in the state (64 percent of vacation/pleasure visitors vs. 39 percent statewide, and 84 percent of all Southwest tourists).

Table 4.47
Vacation/Pleasure Visitor Travel Type

Travel Type	1989	1993	(1993-Statewide)
Package	36%	36%	(61%)
All Independents	64%	64%	(39%)
"pure independent"	56%	57%	(27%)
"inde-package"	8%	7%	(12%)

Source: AVSP 93 Patterns, Table IV-D, Arrivals Table III-A); ASVP 89 Patterns, Tables IV, V-B-1

Transportation within the Region

In all regions but Southwest Alaska, vacation/pleasure visitors transportation needs are met with a variety of modes, including rail, motorcoach, cruise ship, ferry and rental car. Nor surprisingly, Southwest vacation/pleasure visitors rarely use these other modes, and have the highest percentage use of air travel of any state region (in 1989, 84 percent vs. next highest, interior 9 percent). This disparity makes travel within Southwest exciting and memorable, but significantly increases costs and reduces reliability.

Travel between Regions

Alaskan vacation/pleasure travelers typically visit more than one region of the state. For example, of visitors who traveled to Southeast, 56 percent went to SC, 38 percent to interior/north, 41 percent to Denali, but only one percent to Southwest. In contrast, Southwest is rarely included on multi-region trips. In 1993, 6 percent of the travelers who visited Southcentral came to Southwest, as did four percent of those who had visited interior/north, and three percent of those who had visited Denali. These statistics emphasize the current lack of interest in Southwest by the majority of Alaskan tourists, and suggest that Southwest tourism could greatly increase by better appealing to people who already coming to the state.

Comparative Regional Use Patterns (all visitors)

Table 4.48 compares the percentage of statewide visitors participating in specific activities to the participation rate of visitors to Southwest Alaska. As can be seen, visitors in Southwest Alaska engage in patterns of activity quite different from other state regions. Southwest has the highest percentage participation of any region in fresh and saltwater sportfishing, hiking, and hunting; and is second behind Denali in bird watching. In the three activities most commonly engaged in on a statewide level, Southwest has the lowest participation rate. In general, the more popular an activity is with statewide visitors, the less likely it is be common in Southwest (and vice versa).

Table 4.48
Comparative Regional Use Patterns (All Visitors)

Activity	% of Statewide Visitors Participating*	Percent of Southwest Visitors Participating (and Southwest status in state)			
		1989		1993	
1. Shopping	51-85%	22%	(lowest)	32%	(lowest)
2. Visitor Info. Centers	55-68%	21%	(lowest)	26%	(lowest)
3. Restaurants/Nightlife	51-65%	36%	(lowest)	50%	(lowest)
4. Wildlife Viewing	31-68%	63%	(2nd highest)	31%	(2nd lowest)
5. City Tours **	30-53%	5%	(lowest)	4%	(lowest)
6. Bird Watching	22-40%	38%	(2nd highest)	19%	(2nd highest)
7. Day Cruises **	21-32%	4%		1%	
8. Hiking	10-24%	28%	(highest)	23%	(highest)
9. Flightseeing	7-30%	14%		7%	
10. Freshwater Fishing **	3-20%	65%	(highest)	30%	(highest)
11. Rafting	2-13%	7%	(lowest)	–	(lowest)
12. Hunting	0-1%	12%	(highest)	3%	(highest)

* *The range shown indicates the region with the lowest to the highest % participation, excluding southwest Alaska, which tends to be the highest or lowest in any category.*

** *Excludes Southwest and Denali Source, AVSP 93 Patterns, Table II-R.*

Source: AVSP 89 Patterns, Table IV-B-9.

Seasonal Visitation Patterns

Fall/Winter/Spring tourism declines in Southwest relative to summer to a greater degree than it does in the remainder of the state. In Fall/Winter/Spring 1989/90, 240,000 visitors came to Alaska, of which 55,700 were vacation/pleasure visitors. Only a handful of these off-season out-of-state travelers made it to Southwest: five percent of all visitors (14,000) and three percent of vacation/pleasure visitors (1,500). In 1993, the pattern was very similar, with only four percent of Alaska's fall/winter/spring vacation/pleasure travelers (approximately 8,000 people) visiting Southwest.

Market Sector Trends

Generally speaking, growth in various tourism market sectors within Southwest Alaska can be characterized as follows:

- Unguided sport hunting – rapid growth
- Guided sport hunting – growth
- Unguided sport fishing – rapid growth
- Guided sport fishing – varies by location, from slow (Bristol bay) to rapid growth (Dutch Harbor)
- Wildlife viewing – bears rapid, especially out of Kodiak
- Adventure tourism – variable
- Community tourism/Cultural attractions – variable

TRAVEL TO INDIVIDUAL DESTINATIONS

Previous sections focused on travel by out-of-state visitors. A goal of this study is to present information on numbers of travelers to specific destinations, considering both in and out-of-state travelers. Because there is no central or standardized source for this information, available data are sketchy at best. However, an attempt has been made to gather and consolidate as much of this information as possible from a multitude of sources.

- Cruise ships. One cruise ship currently passes through Southwest: the 150-person World Explorer: Princess Cruises will begin making ports of call in Kodiak Summer 1998.

- Commercial adventure tours. Currently a small number of small, commercial tours operate in Southwest each summer, visiting attractions such as Lake Park and Katmai National Park. A larger number of guided river float trips focused on fishing and hunting, occur each summer.

5. EXISTING TRAVEL PATTERN SUMMARY

This chapter summarizes the travel patterns of people within and into and out of the region. This is based on travel as recorded on commercial services as provided by the AMHS and by the certified air carriers. Tables 5.1 through 5.3 show annual travel between regional communities and major external communities for AMHS trips, large certified air carriers, and small certified air carriers respectively. These trips were averaged over data gathered for each of the past nine years. Table 5.4 indicates the sum of annual trip pairs for all three modes combined. Table 5.5 shows the breakdown of average annual regional trips by mode and by internal versus internal/external travel.

Table 5.1
Passenger Volumes by Origin/Destination – AMHS

Origin	Destination	Outside SW Region							Aleutians East Borough						Aleutians West Census Area									Bristol Bay Borough			Dillingham Census Area											Kodiak Island Borough										Lake and Peninsula Borough																	Total
		Anchorage	*Bethel*	*Homer*	*Seldovia*	*Seward*	*Valdez*	*Seattle/Portland*	Akutan	Cold Bay	False Pass	King Cove	Nelson Lagoon	Sand Point	Adak Station	Amchitka	Atka	Attu CG Station	Nikolski	St. George	St. Paul	Shemya Station/ Eareckson AFS	Unalaska	King Salmon	Naknek	South Naknek	Aleknagik	Clarks Point	Dillingham	Ekuk	Ekwok	Koliganek	Manokotak	New Stuyahok	Portage Creek	Togiak	Twin Hills	Akhiok	Chiniak	Karluk	Kodiak	Kodiak Station	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Womens Bay	Chignik	Chignik Lagoon	Chignik Lake	Egegik	Igiugig	Iliamna	Ivanof Bay	Kokhonak	Levelock	Newhalen	Nondalton	Pedro Bay	Perryville	Pilot Point	Port Alsworth	Port Heiden	Ugashik	**Total**
Outside SW Region	*Anchorage*								0	0	0	0		0										0																		0				0		0																0
	Bethel																																																															0
	Homer								1	7	7	37		39										162																		3,822				103		42																4,220
	Seldovia								0	0	0	0		0										10																		89				1		1																101
	Seward								0	0	0	1		0										5																		1,523				62		0																1,591
	Valdez								0	0	0	0		0										0																		68				0		0																68
	Seattle/Portland																																																															0
Aleutians East Borough	Akutan	0		1	0	0	0			0	0	0		0										12																		0				0		2																15
	Cold Bay	0		5	0	2	0		0		3	22		16										7																		2				0		0																57
	False Pass	0		0	0	0	0		1	0		1		1										4																		0				0		0																7
	King Cove	0		23	0	0	0		1	31	9			73										12																		6				1		1																157
	Nelson Lagoon																																																															0
	Sand Point	0		22	0	17	0		0	13	12	78											14																		23				2		11																192
Aleutians West Census Area	Adak Station																																																															0
	Amchitka																																																															0
	Atka																																																															0
	Attu CG Station																																																															0
	Nikolski																																																															0
	St. George																																																															0
	St. Paul																																																															0
	Shemya Station/Eareckson AFB																																																															0
	Unalaska	0		101	2	49	0		16	7	1	11		10																											57				0		6																260
Bristol Bay Borough	King Salmon																																																															0
	Naknek																																																															0
	South Naknek																																																															0
Dillingham Census Area	Aleknagik																																																															0
	Clarks Point																																																															0
	Dillingham																																																															0
	Ekuk																																																															0
	Ekwok																																																															0
	Koliganek																																																															0
	Manokotak																																																															0
	New Stuyahok																																																															0
	Portage Creek																																																															0
	Togiak																																																															0
	Twin Hills																																																															0
Kodiak Island Borough	Akhiok																																																															0
	Chiniak																																																															0
	Karluk																																																															0
	Kodiak	0		3,517	45	1,369	32		0	2	0	5		18										67																								145		92																5,292
	Kodiak Station																																																															0
	Larsen Bay																																																															0
	Old Harbor																																																															0
	Ouzinkie																																																															0
	Port Lions	0		120	2	34	0		0	0	0	1		2										0																		131						0																290
	Womens Bay																																																															0
Lake and Peninsula Borough	Chignik	0		49	1	27	0		4	0	0	1		9										10																		96				0																			197
	Chignik Lagoon																																																															0
	Chignik Lake																																																															0
	Egegik																																																															0
	Igiugig																																																															0
	Iliamna																																																															0
	Ivanof Bay																																																															0
	Kokhonak																																																															0
	Levelock																																																															0
	Newhalen																																																															0
	Nondalton																																																															0
	Pedro Bay																																																															0
	Perryville																																																															0
	Pilot Point																																																															0
	Port Alsworth																																																															0
	Port Heiden																																																															0
	Ugashik																																																															0
Total		0	0	3,838	50	1,498	32	0	23	60	32	157	0	168	0	0	0	0	0	0	0	0	303	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5,817	0	0	0	0	314	0	155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12,447

Table 5.2
Passenger Volumes by Origin/Destination – Large Certificated Air Carriers

Origin		Outside Southwest Region							Aleutians East Borough					
	Destination	*Anchorage*	*Bethel*	*Homer*	*Seldovia*	*Seward*	*Valdez*	*Seattle/Portland*	Akutan	Cold Bay	False Pass	King Cove	Nelson Lagoon	Sand Point
Outside SW Region	*Anchorage*									5,679				3,146
	Bethel													
	Homer													
	Seldovia													
	Seward													
	Valdez													
	Seattle/Portland													
Aleutians East Borough	Akutan													
	Cold Bay	5,839												131
	False Pass													
	King Cove													
	Nelson Lagoon													
	Sand Point	3,182								330				
Aleutians West Census Area	Adak Station	2,762								30				
	Amchitka													
	Atka													
	Attu CG Station													
	Nikolski													
	St. George													
	St. Paul	3,845								66				
	Shemya Station/Eareckson AFB	1,385												
	Unalaska	28,331						279		418				
Bristol Bay Borough	King Salmon	16,817						398		36				
	Naknek													
	South Naknek													
Dillingham Census Area	Aleknagik													
	Clarks Point													
	Dillingham	11,504												
	Ekuk													
	Ekwok													
	Koliganek													
	Manokotak													
	New Stuyahok													
	Portage Creek													
	Togiak													
	Twin Hills													
Kodiak Island Borough	Akhiok													
	Chiniak													
	Karluk													
	Kodiak	24,572						1,147						
	Kodiak Station													
	Larsen Bay													
	Old Harbor													
	Ouzinkie													
	Port Lions													
	Womens Bay													
Lake and Peninsula Borough	Chignik													
	Chignik Lagoon													
	Chignik Lake													
	Egegik													
	Igiugig													
	Iliamna													
	Ivanof Bay													
	Kokhonak													
	Levelock													
	Newhalen													
	Nondalton													
	Pedro Bay													
	Perryville													
	Pilot Point													
	Port Alsworth													
	Port Heiden	200												179
	Ugashik													
Total		98,437	0	0	0		0	1,824	0	6,559	0	0	0	3,456

Origin		Aleutians West Census Area									Bristol Bay Borough		
	Destination	Adak Station	Amchitka	Atka	Attu CG Station	Nikolski	St. George	St. Paul	Shemya Station/Eareckson AFS	Unalaska	King Salmon	Naknek	South Naknek
Outside SW Region	*Anchorage*	3,443						3,721	705	27,112	17,165		
	Bethel												
	Homer												
	Seldovia												
	Seward												
	Valdez												
	Seattle/Portland									331	366		
Aleutians East Borough	Akutan												
	Cold Bay							157		371	34		
	False Pass												
	King Cove												
	Nelson Lagoon												
	Sand Point												
Aleutians West Census Area	Adak Station								646	6			
	Amchitka												
	Atka												
	Attu CG Station												
	Nikolski												
	St. George												
	St. Paul									56			
	Shemya Station/Eareckson AFB												
	Unalaska												
Bristol Bay Borough	King Salmon												
	Naknek												
	South Naknek												
Dillingham Census Area	Aleknagik												
	Clarks Point												
	Dillingham										156		
	Ekuk												
	Ekwok												
	Koliganek												
	Manokotak												
	New Stuyahok												
	Portage Creek												
	Togiak												
	Twin Hills												
Kodiak Island Borough	Akhiok												
	Chiniak												
	Karluk												
	Kodiak												
	Kodiak Station												
	Larsen Bay												
	Old Harbor												
	Ouzinkie												
	Port Lions												
	Womens Bay												
Lake and Peninsula Borough	Chignik												
	Chignik Lagoon												
	Chignik Lake												
	Egegik												
	Igiugig												
	Iliamna												
	Ivanof Bay												
	Kokhonak												
	Levelock												
	Newhalen												
	Nondalton												
	Pedro Bay												
	Perryville												
	Pilot Point												
	Port Alsworth												
	Port Heiden												
	Ugashik												
Total		3,443	0	0	0	0	0	3,878	1,351	27,876	17,721	0	0

Origin		Dillingham Census Area											Kodiak Island Borough									
	Destination	Aleknagik	Clarks Point	Dillingham	Ekuk	Ekwok	Koliganek	Manokotak	New Stuyahok	Portage Creek	Togiak	Twin Hills	Akhiok	Chiniak	Karluk	Kodiak	Kodiak Station	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Womens Bay
Outside SW Region	*Anchorage*			11,033												21,890						
	Bethel																					
	Homer																					
	Seldovia																					
	Seward																					
	Valdez																					
	Seattle/Portland			88												2,532						
Aleutians East Borough	Akutan																					
	Cold Bay																					
	False Pass																					
	King Cove																					
	Nelson Lagoon																					
	Sand Point																					
Aleutians West Census Area	Adak Station																					
	Amchitka																					
	Atka																					
	Attu CG Station																					
	Nikolski																					
	St. George																					
	St. Paul																					
	Shemya Station/Eareckson AFB																					
	Unalaska																					
Bristol Bay Borough	King Salmon			230																		
	Naknek																					
	South Naknek																					
Dillingham Census Area	Aleknagik																					
	Clarks Point																					
	Dillingham																					
	Ekuk																					
	Ekwok																					
	Koliganek																					
	Manokotak																					
	New Stuyahok																					
	Portage Creek																					
	Togiak																					
	Twin Hills																					
Kodiak Island Borough	Akhiok																					
	Chiniak																					
	Karluk																					
	Kodiak																					
	Kodiak Station																					
	Larsen Bay																					
	Old Harbor																					
	Ouzinkie																					
	Port Lions																					
	Womens Bay																					
Lake and Peninsula Borough	Chignik																					
	Chignik Lagoon																					
	Chignik Lake																					
	Egegik																					
	Igiugig																					
	Iliamna																					
	Ivanof Bay																					
	Kokhonak																					
	Levelock																					
	Newhalen																					
	Nondalton																					
	Pedro Bay																					
	Perryville																					
	Pilot Point																					
	Port Alsworth																					
	Port Heiden																					
	Ugashik																					
Total		0	0	11,351	0	0	0	0	0	0	0	0	0	0	0	24,422	0	0	0	0	0	0

Origin		Lake and Peninsula Borough																	
	Destination	Chignik	Chignik Lagoon	Chignik Lake	Egegik	Igiugig	Iliamna	Ivanof Bay	Kokhonak	Levelock	Newhalen	Nondalton	Pedro Bay	Perryville	Pilot Point	Port Alsworth	Port Heiden	Ugashik	**Total**
Outside SW Region	*Anchorage*																487		94,381
	Bethel																		0
	Homer																		0
	Seldovia																		0
	Seward																		
	Valdez																		0
	Seattle/Portland																		3,317
Aleutians East Borough	Akutan																		0
	Cold Bay																		6,532
	False Pass																		0
	King Cove																		0
	Nelson Lagoon																		0
	Sand Point																		3,512
Aleutians West Census Area	Adak Station																		3,444
	Amchitka																		0
	Atka																		0
	Attu CG Station																		0
	Nikolski																		0
	St. George																		0
	St. Paul																		3,967
	Shemya Station/Eareckson AFB																		1,385
	Unalaska																		29,028
Bristol Bay Borough	King Salmon																		17,481
	Naknek																		0
	South Naknek																		0
Dillingham Census Area	Aleknagik																		0
	Clarks Point																		0
	Dillingham																		11,660
	Ekuk																		0
	Ekwok																		0
	Koliganek																		0
	Manokotak																		0
	New Stuyahok																		0
	Portage Creek																		0
	Togiak																		0
	Twin Hills																		0
Kodiak Island Borough	Akhiok																		0
	Chiniak																		0
	Karluk																		0
	Kodiak																		25,719
	Kodiak Station																		0
	Larsen Bay																		0
	Old Harbor																		0
	Ouzinkie																		0
	Port Lions																		0
	Womens Bay																		0
Lake and Peninsula Borough	Chignik																		0
	Chignik Lagoon																		0
	Chignik Lake																		0
	Egegik																		0
	Igiugig																		0
	Iliamna																		0
	Ivanof Bay																		0
	Kokhonak																		0
	Levelock																		0
	Newhalen																		0
	Nondalton																		0
	Pedro Bay																		0
	Perryville																		0
	Pilot Point																		0
	Port Alsworth																		0
	Port Heiden																		379
	Ugashik																		0
Total		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	487	0	200,805

Table 5.3
Passenger Volumes by Origin/Destination – Small Certificated/Commuter Air Carriers

Origin	Destination	Outside Southwest Region							Aleutians East Borough						Aleutians West Census Area								
		Anchorage	*Bethel*	*Homer*	*Seldovia*	*Seward*	*Valdez*	*Seattle/Portland*	Akutan	Cold Bay	False Pass	King Cove	Nelson Lagoon	Sand Point	Adak Station	Amchitka	Atka	Attu CG Station	Nikolski	St. George	St. Paul	Shemya Station/Eareckson AFS	Unalaska
Outside SW Region	*Anchorage*									301				391						690	898		6,187
	Bethel																						
	Homer																						
	Seldovia																						
	Seward																						
	Valdez																						
	Seattle/Portland																						
Aleutians East Borough	Akutan																						2,674
	Cold Bay	301									415	3,054	172	122									91
	False Pass									415													
	King Cove									3,054													
	Nelson Lagoon									172													
	Sand Point	391								122													77
Aleutians West Census Area	Adak Station																						
	Amchitka																						
	Atka																						359
	Attu CG Station																						
	Nikolski																						81
	St. George	690																					
	St. Paul	898																					138
	Shemya Station/Eareckson AFB																						
	Unalaska	6,187							2,674	91				77			359		81		138		
Bristol Bay Borough	King Salmon	15,802																					
	Naknek																						
	South Naknek																						
Dillingham Census Area	Aleknagik																						
	Clarks Point																						
	Dillingham	12,916	627																				
	Ekuk																						
	Ekwok																						
	Koliganek																						
	Manokotak																						
	New Stuyahok																						
	Portage Creek																						
	Togiak																						
	Twin Hills																						
Kodiak Island Borough	Akhiok																						
	Chiniak																						
	Karluk																						
	Kodiak	45,164		509																			
	Kodiak Station																						
	Larsen Bay																						
	Old Harbor																						
	Ouzinkie																						
	Port Lions																						
	Womens Bay																						
Lake and Peninsula Borough	Chignik																						
	Chignik Lagoon																						
	Chignik Lake																						
	Egegik																						
	Igiugig																						
	Iliamna	5,679																					
	Ivanof Bay																						
	Kokhonak																						
	Levelock																						
	Newhalen																						
	Nondalton																						
	Pedro Bay																						
	Perryville																						
	Pilot Point																						
	Port Alsworth																						
	Port Heiden																						
	Ugashik																						
Total		88,028	627	509	0		0	0	2,674	4,155	415	3,054	172	590	0	0	359	0	81	690	1,036	0	9,607

Origin	Destination	Bristol Bay Borough			Dillingham Census Area											Kodiak Island Borough									
		King Salmon	Naknek	South Naknek	Aleknagik	Clarks Point	Dillingham	Ekuk	Ekwok	Koliganek	Manokotak	New Stuyahok	Portage Creek	Togiak	Twin Hills	Akhiok	Chiniak	Karluk	Kodiak	Kodiak Station	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Womens Bay
Outside SW Region	*Anchorage*	15,802					12,916												45,164						
	Bethel						627																		
	Homer																		509						
	Seldovia																								
	Seward																								
	Valdez																								
	Seattle/Portland																								
Aleutians East Borough	Akutan																								
	Cold Bay																								
	False Pass																								
	King Cove																								
	Nelson Lagoon																								
	Sand Point																								
Aleutians West Census Area	Adak Station																								
	Amchitka																								
	Atka																								
	Attu CG Station																								
	Nikolski																								
	St. George																								
	St. Paul																								
	Shemya Station/Eareckson AFB																								
	Unalaska																								
Bristol Bay Borough	King Salmon		99	1,081			1,821												167						
	Naknek	99					493																		
	South Naknek	1,081					230																		
Dillingham Census Area	Aleknagik						115																		
	Clarks Point						1,892																		
	Dillingham	1,821	493	230	115	1,892		667	311	536	1,859	733	295	2,747	1,488										
	Ekuk						667																		
	Ekwok						311																		
	Koliganek						536																		
	Manokotak						1,859																		
	New Stuyahok						733																		
	Portage Creek						295																		
	Togiak						2,747																		
	Twin Hills						1,488																		
Kodiak Island Borough	Akhiok																		561						
	Chiniak																								
	Karluk																		688						
	Kodiak	167														561		688			1,935	2,148	1,006	1,452	
	Kodiak Station																								
	Larsen Bay																		1,935						
	Old Harbor																		2,148						
	Ouzinkie																		1,006						
	Port Lions																		1,452						
	Womens Bay																								
Lake and Peninsula Borough	Chignik	520																							
	Chignik Lagoon	311																							
	Chignik Lake	1,011																	70						
	Egegik	1,864																							
	Igiugig	157																							
	Iliamna																								
	Ivanof Bay	78																							
	Kokhonak																								
	Levelock	351					276																		
	Newhalen																								
	Nondalton																								
	Pedro Bay																								
	Perryville	244																							
	Pilot Point	1,059																							
	Port Alsworth																								
	Port Heiden	466																							
	Ugashik																								
Total		25,031	592	1,311	115	1,892	27,006	667	311	536	1,859	733	295	2,747	1,488	561	0	688	53,700	0	1,935	2,148	1,006	1,452	0

Origin	Destination	Lake and Peninsula Borough																	
		Chignik	Chignik Lagoon	Chignik Lake	Egegik	Igiugig	Iliamna	Ivanof Bay	Kokhonak	Levelock	Newhalen	Nondalton	Pedro Bay	Perryville	Pilot Point	Port Alsworth	Port Heiden	Ugashik	**Total**
Outside SW Region	*Anchorage*						5,679												88,028
	Bethel																		627
	Homer																		509
	Seldovia																		0
	Seward																		0
	Valdez																		0
	Seattle/Portland																		0
Aleutians East Borough	Akutan																		2,674
	Cold Bay																		4,155
	False Pass																		415
	King Cove																		3,054
	Nelson Lagoon																		172
	Sand Point																		590
Aleutians West Census Area	Adak Station																		0
	Amchitka																		0
	Atka																		359
	Attu CG Station																		0
	Nikolski																		81
	St. George																		690
	St. Paul																		1,036
	Shemya Station/Eareckson AFB																		0
	Unalaska																		9,607
Bristol Bay Borough	King Salmon	520	311	1,011	1,864	157		78		351				244	1,059		466		25,031
	Naknek																		592
	South Naknek																		1,311
Dillingham Census Area	Aleknagik																		115
	Clarks Point																		1,892
	Dillingham									276									27,006
	Ekuk																		667
	Ekwok																		311
	Koliganek																		536
	Manokotak																		1,859
	New Stuyahok																		733
	Portage Creek																		295
	Togiak																		2,747
	Twin Hills																		1,488
Kodiak Island Borough	Akhiok																		561
	Chiniak																		0
	Karluk																		688
	Kodiak			70															53,700
	Kodiak Station																		0
	Larsen Bay																		1,935
	Old Harbor																		2,148
	Ouzinkie																		1,006
	Port Lions																		1,452
	Womens Bay																		0
Lake and Peninsula Borough	Chignik																		520
	Chignik Lagoon																		311
	Chignik Lake																		1,081
	Egegik																		1,864
	Igiugig																		157
	Iliamna								120			67				21			5,887
	Ivanof Bay																		78
	Kokhonak						120												120
	Levelock																		627
	Newhalen																		0
	Nondalton						67												67
	Pedro Bay																		0
	Perryville																		244
	Pilot Point																		1,059
	Port Alsworth						21												21
	Port Heiden																		466
	Ugashik																		0
Total		520	311	1,081	1,864	157	5,887	78	120	627	0	67	0	244	1,059	21	466	0	250,572

Table 5.4
Passenger Volumes by Origin/Destination – Air and Marine Modes Combined

Origin		Outside Southwest Region							Aleutians East Borough					
	Destination	*Anchorage*	*Bethel*	*Homer*	*Seldovia*	*Seward*	*Valdez*	*Seattle/Portland*	Akutan	Cold Bay	False Pass	King Cove	Nelson Lagoon	Sand Point
Outside SW Region	*Anchorage*									5,980				3,537
	Bethel													
	Homer								1	7	7	37		39
	Seldovia													
	Seward											1		
	Valdez													
	Seattle/Portland													
Aleutians East Borough	Akutan			1										
	Cold Bay	6,140		5		2					418	3,076	172	269
	False Pass								1	415		1		1
	King Cove			23					1	3,085	9			73
	Nelson Lagoon									172				
	Sand Point	3,573		22		17				465	12	78		
Aleutians West Census Area	Adak Station	2,762								30				
	Amchitka													
	Atka													
	Attu CG Station													
	Nikolski													
	St. George	690												
	St. Paul	4,743								66				
	Shemya Station/Eareckson AFB	1,385												
	Unalaska	34,518		101	2	49		279	2,690	516	1	11		87
Bristol Bay Borough	King Salmon	32,619						398		36				
	Naknek													
	South Naknek													
Dillingham Census Area	Aleknagik													
	Clarks Point													
	Dillingham	24,420	627											
	Ekuk													
	Ekwok													
	Koliganek													
	Manokotak													
	New Stuyahok													
	Portage Creek													
	Togiak													
	Twin Hills													
Kodiak Island Borough	Akhiok													
	Chiniak													
	Karluk													
	Kodiak	69,736		4,026	45	1,369	32	1,147		2		5		18
	Kodiak Station													
	Larsen Bay													
	Old Harbor													
	Ouzinkie													
	Port Lions			120	2	34						1		2
	Womens Bay													
Lake and Peninsula Borough	Chignik			49	1	27			4			1		9
	Chignik Lagoon													
	Chignik Lake													
	Egegik													
	Igiugig													
	Iliamna	5,679												
	Ivanof Bay													
	Kokhonak													
	Levelock													
	Newhalen													
	Nondalton													
	Pedro Bay													
	Perryville													
	Pilot Point													
	Port Alsworth													
	Port Heiden	200												179
	Ugashik													
Total		186,465	627	4,347	50	1,498	32	1,824	2,697	10,774	447	3,211	172	4,214

Origin		Aleutians West Census Area									Bristol Bay Borough		
	Destination	Adak Station	Amchitka	Atka	Attu CG Station	Nikolski	St. George	St. Paul	Shemya Station/Eareckson AFS	Unalaska	King Salmon	Naknek	South Naknek
Outside SW Region	*Anchorage*	3,443					690	4,619	705	33,299	32,967		
	Bethel												
	Homer									162			
	Seldovia									10			
	Seward									5			
	Valdez												
	Seattle/Portland									331	366		
Aleutians East Borough	Akutan									2,686			
	Cold Bay							157		469	34		
	False Pass									4			
	King Cove									12			
	Nelson Lagoon												
	Sand Point									91			
Aleutians West Census Area	Adak Station								646	6			
	Amchitka												
	Atka									359			
	Attu CG Station												
	Nikolski									81			
	St. George												
	St. Paul									194			
	Shemya Station/Eareckson AFB												
	Unalaska			359		81		138					
Bristol Bay Borough	King Salmon											99	1,081
	Naknek										99		
	South Naknek										1,081		
Dillingham Census Area	Aleknagik												
	Clarks Point												
	Dillingham										1,977	493	230
	Ekuk												
	Ekwok												
	Koliganek												
	Manokotak												
	New Stuyahok												
	Portage Creek												
	Togiak												
	Twin Hills												
Kodiak Island Borough	Akhiok												
	Chiniak												
	Karluk												
	Kodiak									67	167		
	Kodiak Station												
	Larsen Bay												
	Old Harbor												
	Ouzinkie												
	Port Lions												
	Womens Bay												
Lake and Peninsula Borough	Chignik									10	520		
	Chignik Lagoon										311		
	Chignik Lake										1,011		
	Egegik										1,864		
	Igiugig										157		
	Iliamna												
	Ivanof Bay										78		
	Kokhonak												
	Levelock										351		
	Newhalen												
	Nondalton												
	Pedro Bay												
	Perryville										244		
	Pilot Point										1,059		
	Port Alsworth												
	Port Heiden										466		
	Ugashik												
Total		3,443		359		81	690	4,914	1,351	37,786	42,752	592	1,311

Origin		Dillingham Census Area											Kodiak Island Borough									
	Destination	Aleknagik	Clarks Point	Dillingham	Ekuk	Ekwok	Koliganek	Manokotak	New Stuyahok	Portage Creek	Togiak	Twin Hills	Akhiok	Chiniak	Karluk	Kodiak	Kodiak Station	Larsen Bay	Old Harbor	Ouzinkie	Port Lions	Womens Bay
Outside SW Region	*Anchorage*			23,949												67,054						
	Bethel			627																		
	Homer															4,331					103	
	Seldovia															89					1	
	Seward															1,523					62	
	Valdez															68						
	Seattle/Portland			88												2,532						
Aleutians East Borough	Akutan																					
	Cold Bay															2						
	False Pass																					
	King Cove															6					1	
	Nelson Lagoon																					
	Sand Point															23					2	
Aleutians West Census Area	Adak Station																					
	Amchitka																					
	Atka																					
	Attu CG Station																					
	Nikolski																					
	St. George																					
	St. Paul																					
	Shemya Station/Eareckson AFB																					
	Unalaska															57						
Bristol Bay Borough	King Salmon			2,051												167						
	Naknek			493																		
	South Naknek			230																		
Dillingham Census Area	Aleknagik			115																		
	Clarks Point			1,892																		
	Dillingham	115	1,892		667	311	536	1,859	733	295	2,747	1,488										
	Ekuk			667																		
	Ekwok			311																		
	Koliganek			536																		
	Manokotak			1,859																		
	New Stuyahok			733																		
	Portage Creek			295																		
	Togiak			2,747																		
	Twin Hills			1,488																		
Kodiak Island Borough	Akhiok															561						
	Chiniak																					
	Karluk															688						
	Kodiak												561		688			1,935	2,148	1,006	1,597	
	Kodiak Station																					
	Larsen Bay															1,935						
	Old Harbor															2,148						
	Ouzinkie															1,006						
	Port Lions															1,583						
	Womens Bay																					
Lake and Peninsula Borough	Chignik															96						
	Chignik Lagoon																					
	Chignik Lake															70						
	Egegik																					
	Igiugig																					
	Iliamna																					
	Ivanof Bay																					
	Kokhonak																					
	Levelock			276																		
	Newhalen																					
	Nondalton																					
	Pedro Bay																					
	Perryville																					
	Pilot Point																					
	Port Alsworth																					
	Port Heiden																					
	Ugashik																					
Total		115	1,892	38,357	667	311	536	1,859	733	295	2,747	1,488	561		688	83,939		1,935	2,148	1,006	1,766	

Origin		Lake and Peninsula Borough																	
	Destination	Chignik	Chignik Lagoon	Chignik Lake	Egegik	Igiugig	Iliamna	Ivanof Bay	Kokhonak	Levelock	Newhalen	Nondalton	Pedro Bay	Perryville	Pilot Point	Port Alsworth	Port Heiden	Ugashik	**Total**
Outside SW Region	*Anchorage*						5,679										487		182,409
	Bethel																		627
	Homer	42																	4,729
	Seldovia	1																	101
	Seward																		1,591
	Valdez																		68
	Seattle/Portland																		3,317
Aleutians East Borough	Akutan	2																	2,689
	Cold Bay																		10,744
	False Pass																		422
	King Cove	1																	3,211
	Nelson Lagoon																		172
	Sand Point	11																	4,294
Aleutians West Census Area	Adak Station																		3,444
	Amchitka																		
	Atka																		359
	Attu CG Station																		
	Nikolski																		81
	St. George																		690
	St. Paul																		5,003
	Shemya Station/Eareckson AFB																		1,385
	Unalaska	6																	38,895
Bristol Bay Borough	King Salmon	520	311	1,011	1,864	157		78		351				244	1,059		466		42,512
	Naknek																		592
	South Naknek																		1,311
Dillingham Census Area	Aleknagik																		115
	Clarks Point																		1,892
	Dillingham									276									38,666
	Ekuk																		667
	Ekwok																		311
	Koliganek																		536
	Manokotak																		1,859
	New Stuyahok																		733
	Portage Creek																		295
	Togiak																		2,747
	Twin Hills																		1,488
Kodiak Island Borough	Akhiok																		561
	Chiniak																		
	Karluk																		688
	Kodiak	92		70															84,711
	Kodiak Station																		
	Larsen Bay																		1,935
	Old Harbor																		2,148
	Ouzinkie																		1,006
	Port Lions																		1,742
	Womens Bay																		
Lake and Peninsula Borough	Chignik																		717
	Chignik Lagoon																		311
	Chignik Lake																		1,081
	Egegik																		1,864
	Igiugig																		157
	Iliamna								120			67				21			5,887
	Ivanof Bay																		78
	Kokhonak						120												120
	Levelock																		627
	Newhalen																		
	Nondalton						67												67
	Pedro Bay																		
	Perryville																		244
	Pilot Point																		1,059
	Port Alsworth						21												21
	Port Heiden																		845
	Ugashik																		
Total		675	311	1,081	1,864	157	5,887	78	120	627		67		244	1,059	21	953		463,824

Table 5.5
Regional Passenger Travel Pattern Summary

	Internal Trips		Internal/ External Trips		
	Number	**% of Mode Total**	**Number**	**% of Mode Total**	**Total Trips**
AMHS	1,049	8.4%	11,398	91.6%	12,447
% of Total	*1.4%*		*2.9%*		*2.7%*
Small Certificated Air	72,244	28.8%	178,328	71.2%	250,572
% of Total	*94.9%*		*46.0%*		*54.0%*
Large Certificated Air	2,846	1.4%	197,959	98.6%	200,805
% of Total	*3.7%*		*51.1%*		*43.3%*
Total Certificated Air	75,090	16.6%	376,287	83.4%	451,377
% of Total	*98.6%*		*97.1%*		*97.3%*
Total Trips	76,139	16.4%	387,685	83.6%	463,824

*Note that Table 5.5 reflects travel reported by residents of the region; as such, it does not include travel patterns of nonresidents.

Key points identified in the passenger travel summary analysis include the following:

- Of all regional passenger trips made, over 97 percent are by air (54% on small carriers, 43.3% on large carriers), and only 2.7 percent are made using AMHS.
- The vast majority of all regional trips, 83.6 percent, are trips made between regional communities and external points and only a relatively small proportion, 16.4 percent, are intra-regional trips.
- Air travel using small carriers represents the vast majority of intra-regional trips at 94.9 percent, while 3.7 percent are made by large air carriers, and only 1.4 percent are made using AMHS.

6. BIBLIOGRAPHY

U.S. Army Corps of Engineers, Waterborne Commerce Statistics Center, Navigation Data Center, Part 4, Pacific Coast, Alaska and Hawaii, Data Diskettes from 1986-1995.

Alaska Shipping Chart, Marine Digest, January 1997, Vol. 75, No. 5, page 22.

Shipping Schedules and Phone Interviews with the listed shippers.

United States Coast Pilot 9 – Pacific and Arctic Coasts Alaska: Cape Spencer to Beaufort Sea, 15th Edition, U.S. Department of Commerce, National Oceanic and Atmospheric Administration, 1992.

"Alaska," Pacific Maritime Magazine, February 1997, pages 14-20.

"Alaska Marine Highway System Fleet Condition and Asbestos Survey," Volume 1, Fleet Summary, prepared for State of Alaska, Department of Transportation and Public Facilities by The Glosten Associates, Inc., May 1991

"Owner's Requirements for the Ocean Class RO-RO Passenger Vessel," prepared for the State of Alaska, Department of Transportation and Public Facilities, Alaska Marine Highway System, by The Glosten Associates, Inc., 30 April 1996

Hutchison, Bruce L., "Introduction to the Alaska Marine Highway System's New Ocean Class Vessel," the Society of Naval Architects and Marine Engineers (SNAME), presented to the September 1996 Pacific Northwest Section meeting and to the June 1997 California Joint Sections meeting. To be published in the January 1998 issue of *Marine Technology*.

"Annual Traffic Volume Report of the Alaska Marine Highway System, January 1 through December 31, 1993," Department of Transportation and Public Facilities, Alaska Marine Highway System, March 1994

Halter Marine Group, Inc., Contract MT826, Dwg. No. F-73, Rev. 1, Sheet 7, 3/8/96, "Vehicle Loading and Parking".

AirNav, Paulo Santos: *http://www.airnav.com/airports/*

Alaska Department of Natural Resources, *GIS Data*.

Alaska Department of Transportation and Public Facilities, *Alaska Intermodal Transportation Plan*, October 1994.

Alaska Department of Transportation and Public Facilities, *Alaska Aviation System Plan Database*, 1996.

Alaska Department of Transportation and Public Facilities, *Central Region Traffic Report*, 1991, 1992, 1993.

Alaska Department of Transportation and Public Facilities, *Central Region Traffic Report*, 1994, 1995, 1996.

Alaska Department of Transportation and Public Facilities, *General Log – CDS Route Numbers*, as of 96/12/05.

Lake and Peninsula Borough, *Lake and Peninsula Borough Intra-Village Road Project Priorities*, 1993.

U.S. Department of Interior, Bureau of Indian Affairs, *Juneau Area Transportation Plan, Anchorage Agency Area*, 1993.

U.S. Department of Transportation, Bureau of Transportation Statistics, Office of Airline Information, *Airport Activity Statistics of Certificated Air Carriers*, 1988-1995.

U.S. Department of Transportation, Bureau of Transportation Statistics, *Commuter Air Carrier Activity Outbound and Inbound Traffic*, 1988-1996.

U.S. Department of Transportation, Bureau of Transportation Statistics, *T100 Market Data*.

U.S. Department of Transportation, Federal Aviation Administration, *Air Carrier Activity Information Statistics Database, 1988-1996, Reports V3P and V2*.

U.S. Department of Transportation, Federal Aviation Administration, *FAA Airport Master Records (form 5010s)*.

Department of Transportation, Federal Aviation Administration, *Statistical Handbook of Aviation*, 1997.

U.S. Department of Transportation, Office of the Secretary of Transportation, *Information Packet on How to Become a Certificated Air Carrier*, December 1994.

Alaska Northwest Books, *The Alaska Almanac, Facts About Alaska*, 17th edition, 1993.

DMJM, *Aleutian and Southwest Alaska Multi Modal Transportation Study*, Alaska Department of Transportation and Public Facilities, December 1980, revised October 1983 and May 1984.

DuFresne, Jim, *Alaska, a Lonely Planet Travel Survival Kit*, 5th edition, Lonely Planet Publications, May 1997.

NCB Teams, Alaska Native Corporations: *http://www.ncb.com/head/alaska2.htm*

Southwest Alaska Municipal Conference, *Fall 1997 Membership Directory*, 1997.

Alaska Department of Transportation and Public Facilities, *Alaska Marine Highway System Master Plan*, 1991.

Alaska Marine Highway System Database, 1988-1996.

AMHS Department of Transportation and Public Facilities, *Alaska Marine Highway System Annual Traffic Volume Report 1996*, 1997.

AMHS Department of Transportation and Public Facilities, *Alaska Marine Highway System Annual Traffic Volume Report 1995*, 1996.

AMHS Department of Transportation and Public Facilities, Support Services Division, *Alaska Marine Highway System Fund Annual Financial Report, Fiscal Year Ended June, 30 1996*, 1996.

Alaska Marine Highway System Website, www.dot.state.ak.us/external/amhs/home.html.

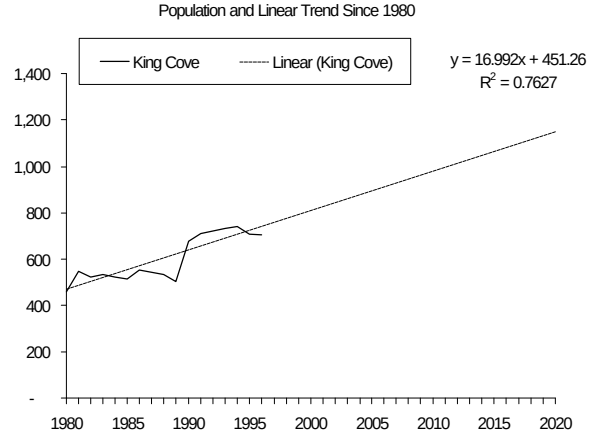
Prepared by Art Anderson and Associates and H. W. Lochner, Inc., *Alaska Marine Highway System Fast Passenger Vehicle Ferry Optimization Study, Preliminary Draft*, 1995.

APPENDIX A. SOUTHWEST REGION COMMUNITIES POPULATION TRENDS

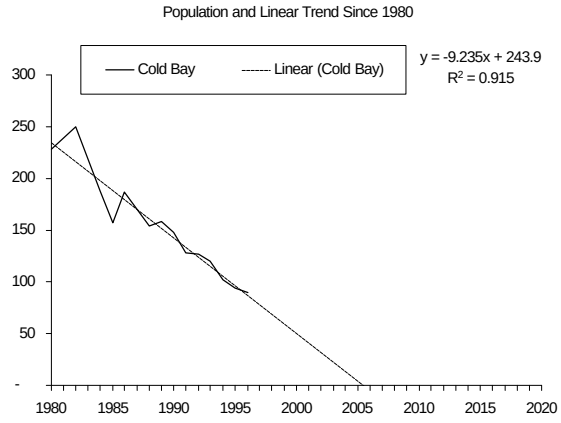
ALEUTIANS EAST BOROUGH

Akutan

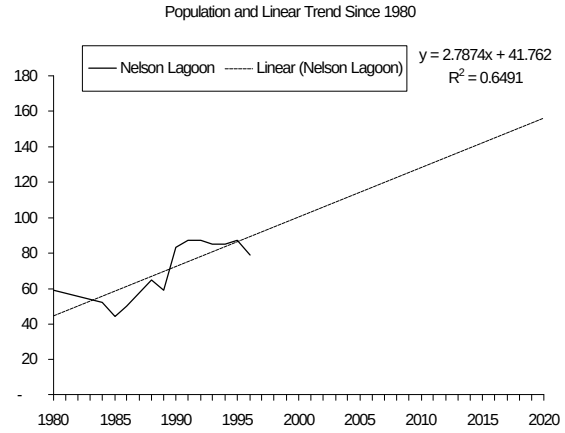
King Cove



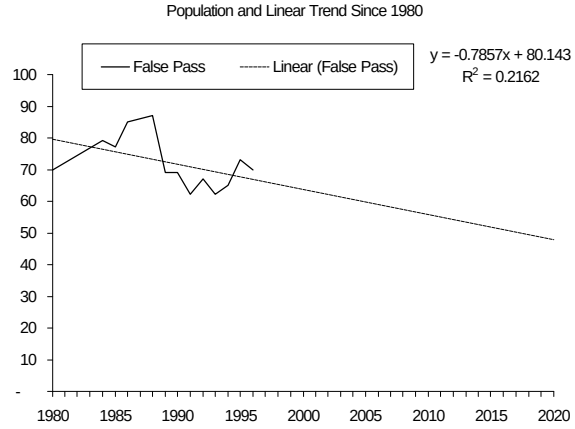
Cold Bay



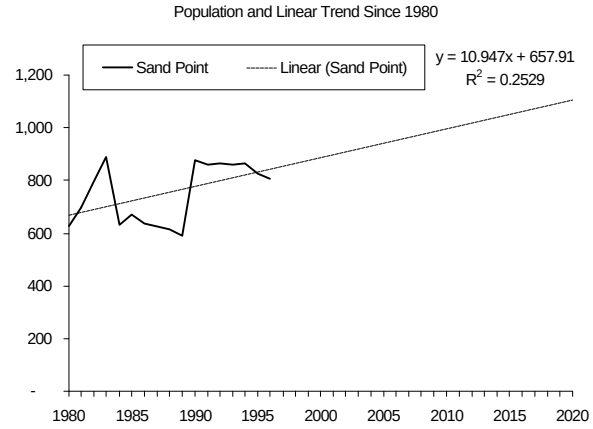
Nelson Lagoon



False Pass

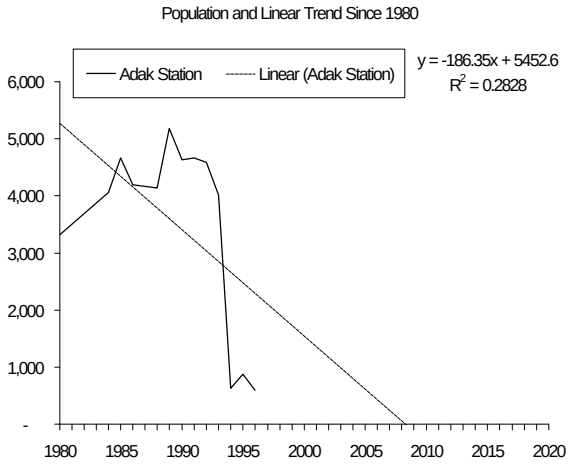


Sand Point

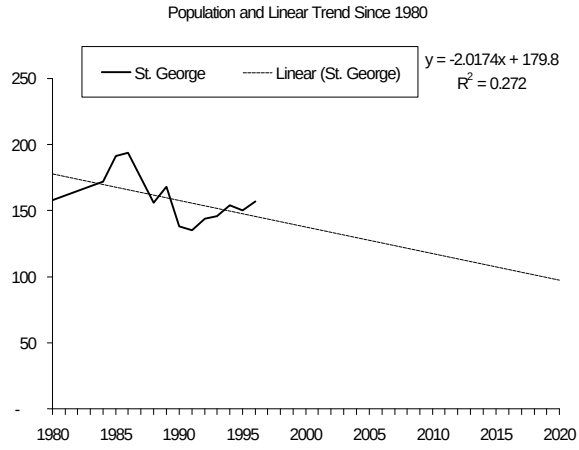


ALEUTIANS WEST CENSUS AREA

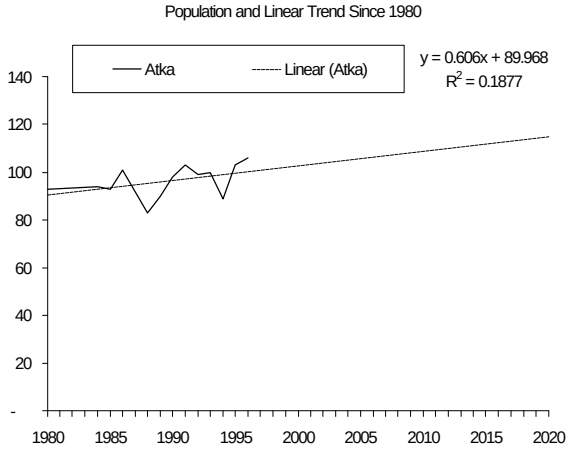
Adak Station



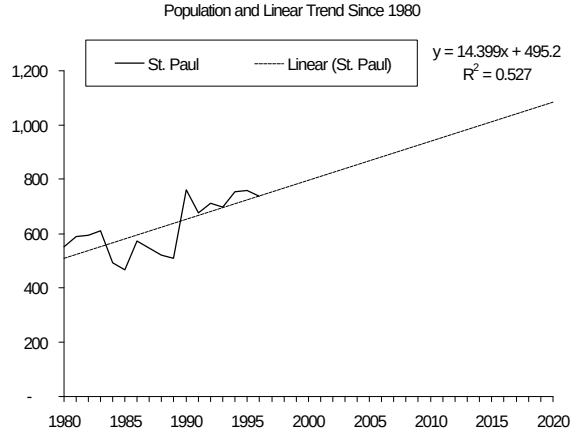
St. George



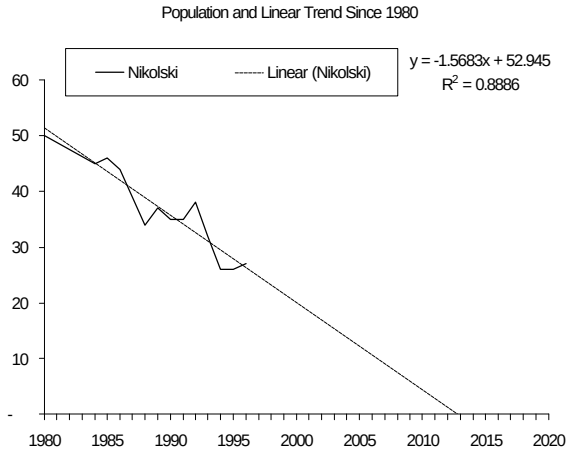
Atka



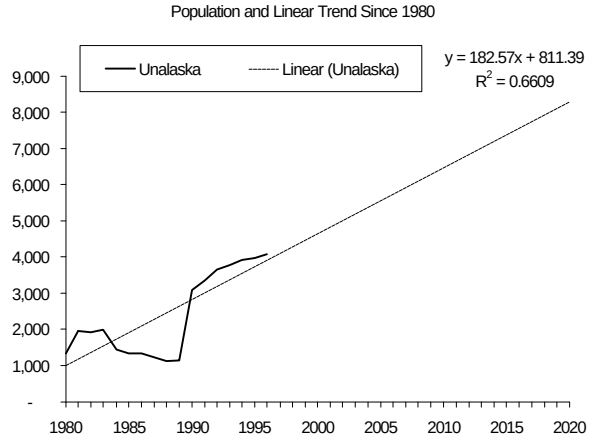
St. Paul



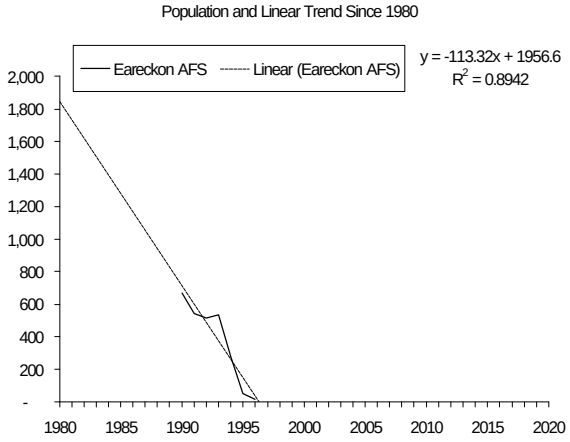
Nikolski



Unalaska

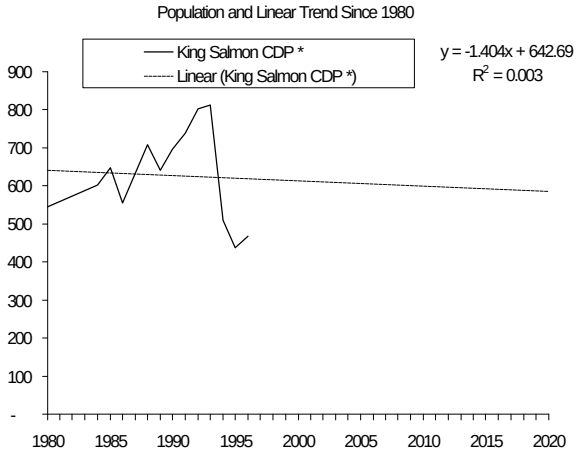


Eareckson AFB

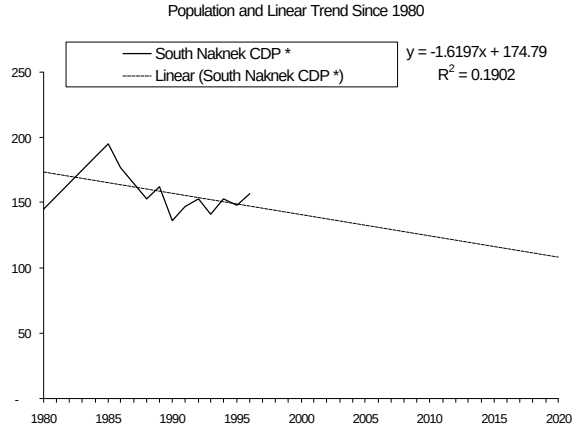


BRISTOL BAY BOROUGH

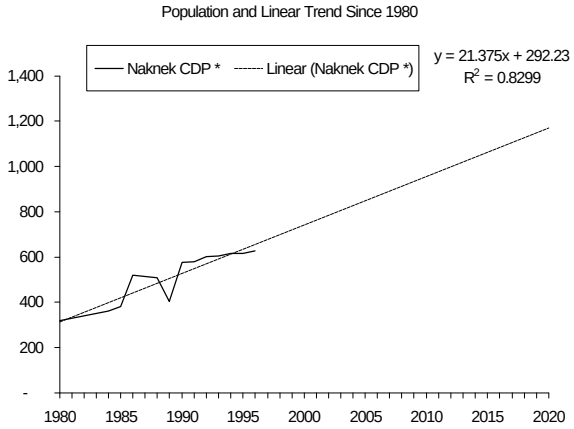
King Salmon



South Naknek

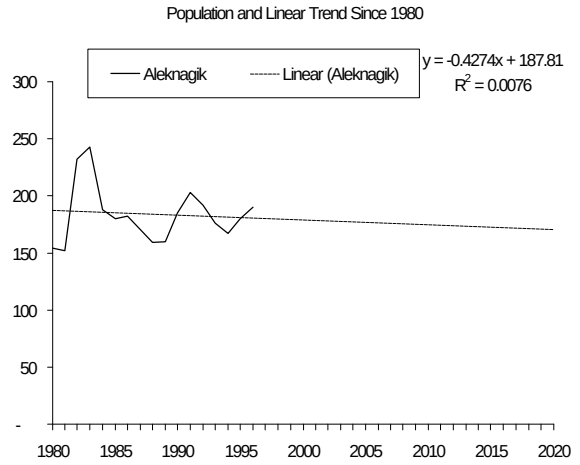


Naknek

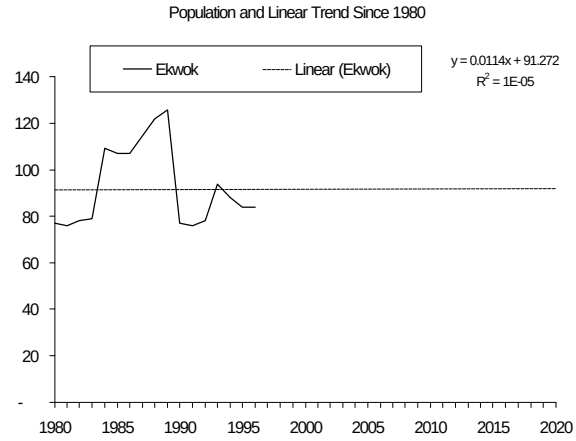


DILLINGHAM CENSUS AREA

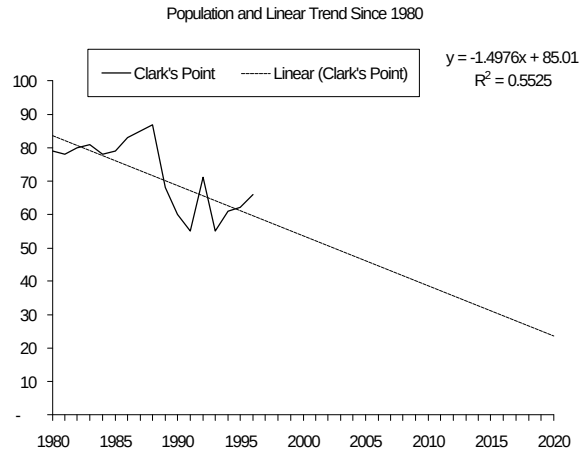
Aleknagik



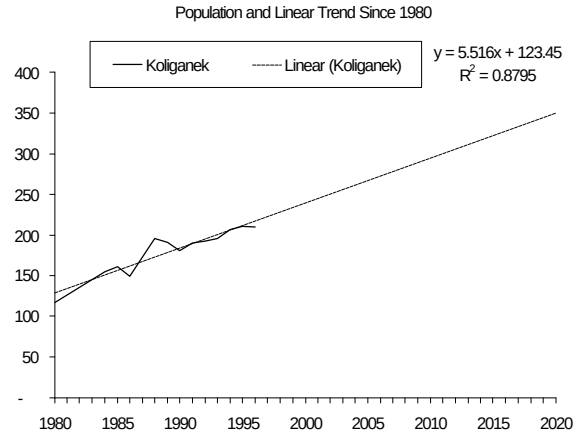
Ekwok



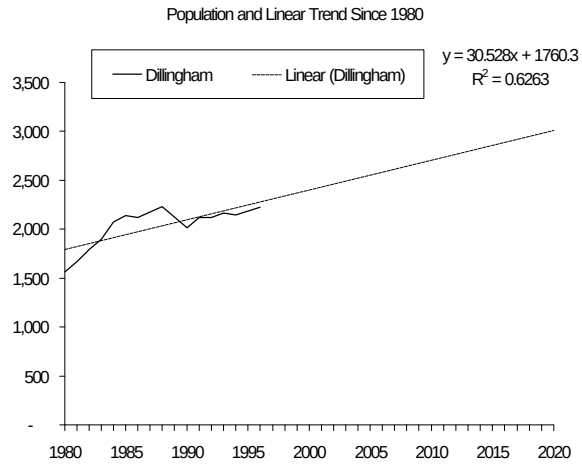
Clarks Point



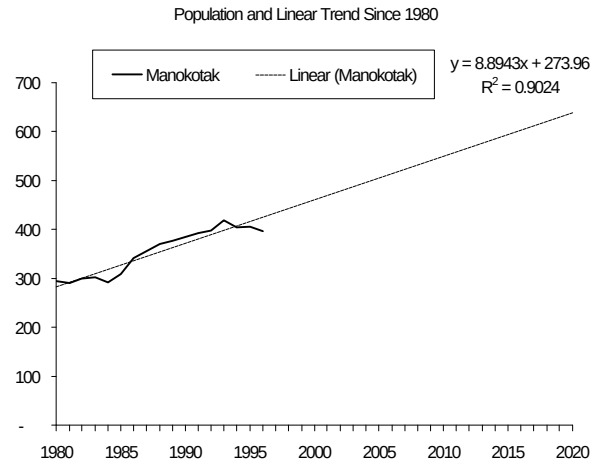
Koliganek



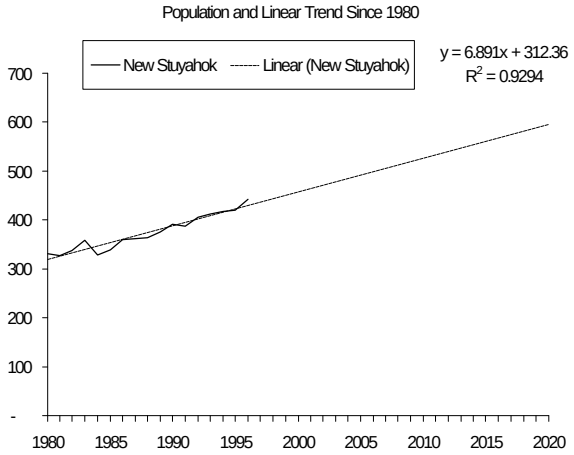
Dillingham



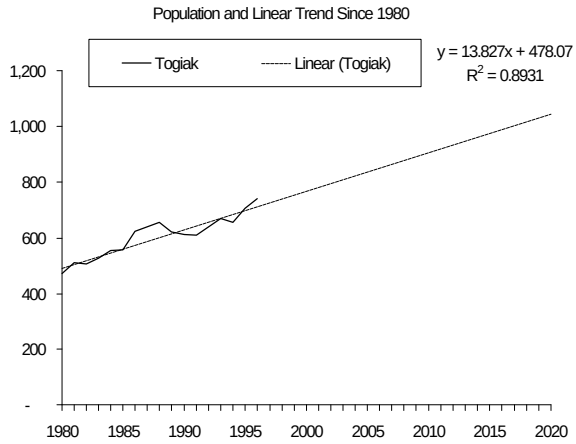
Manokotak



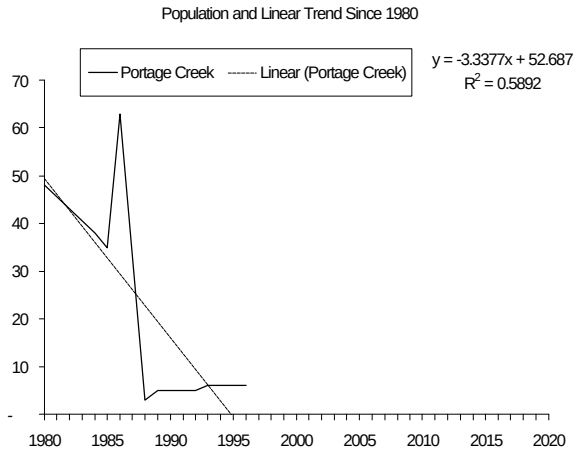
New Stuyahok



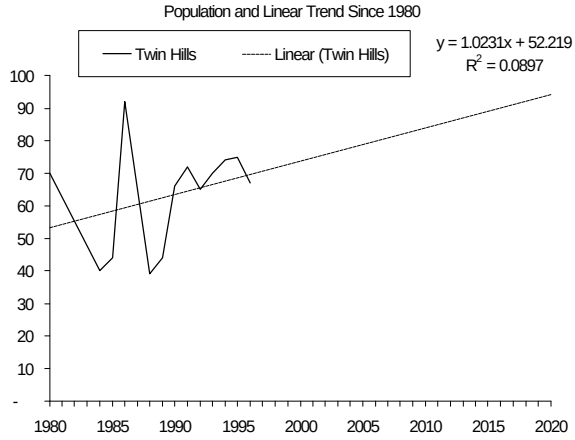
Togiak



Portage Creek

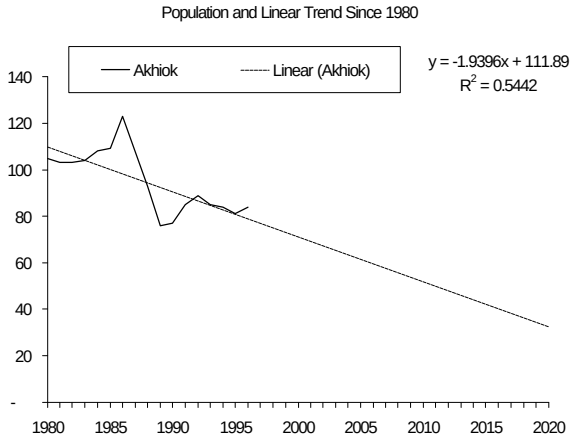


Twin Hills

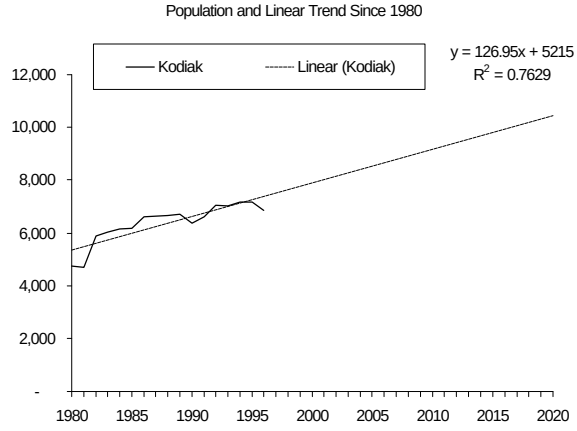


KODIAK ISLAND BOROUGH

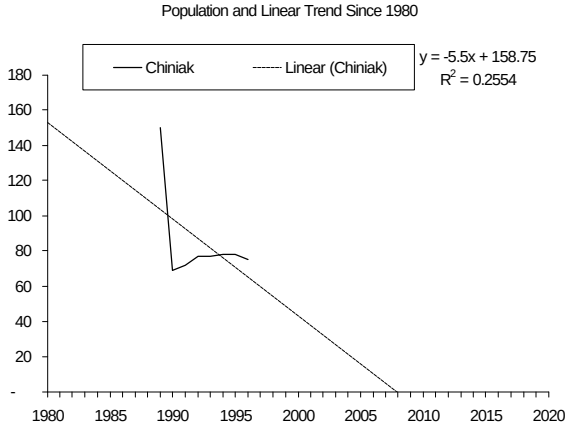
Akhiok



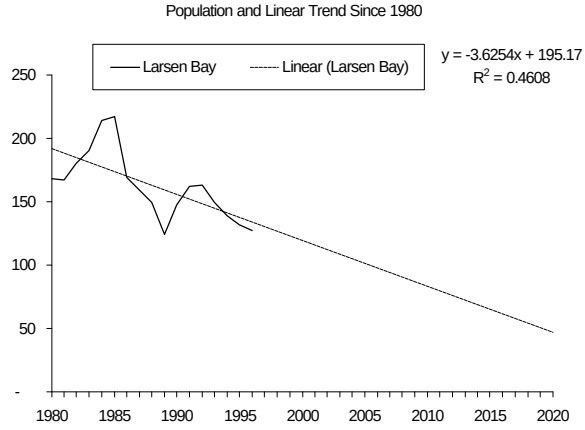
Kodiak



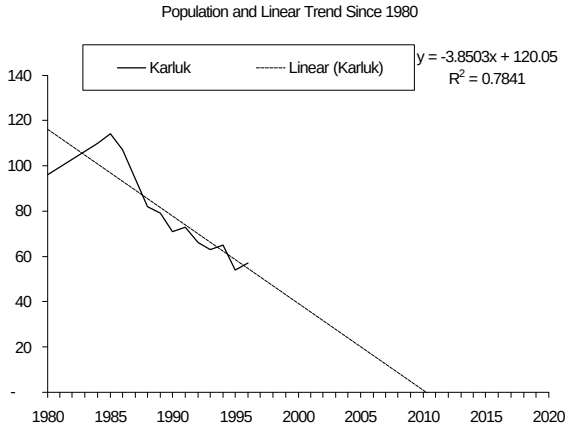
Chiniak



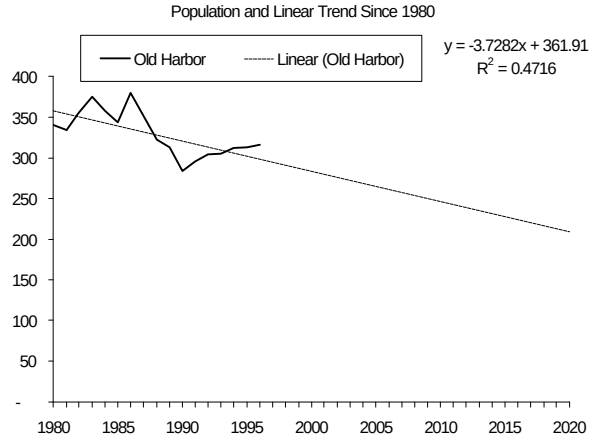
Larsen Bay



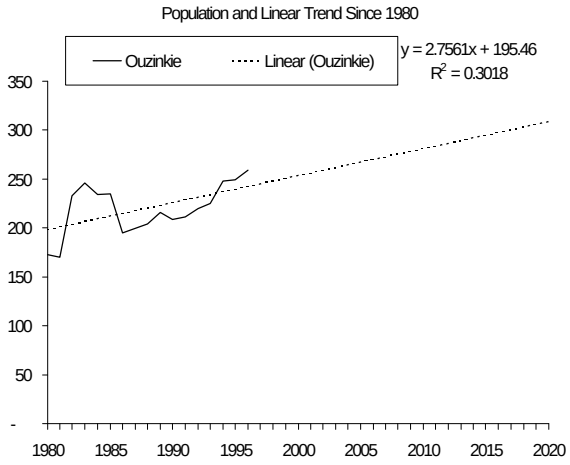
Karluk



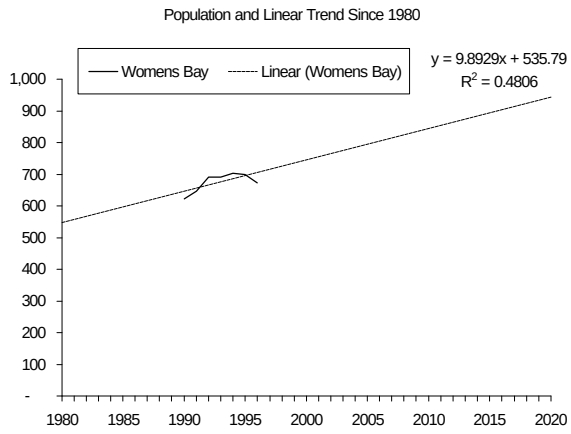
Old Harbor



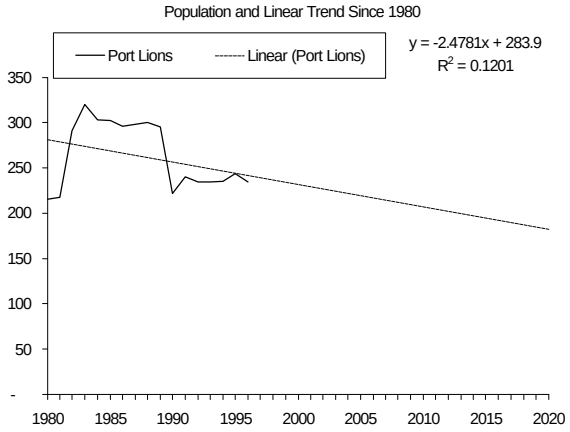
Ouzinkie



Womens Bay

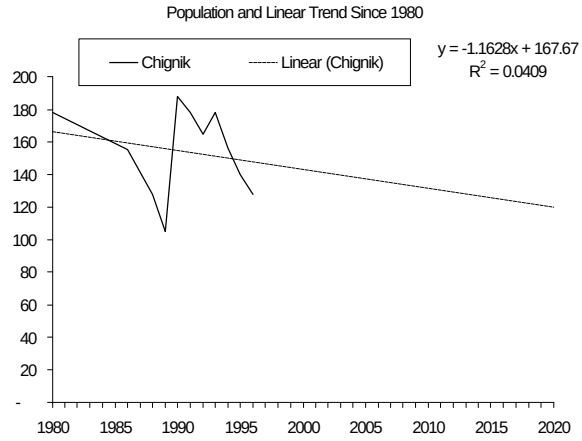


Port Lions

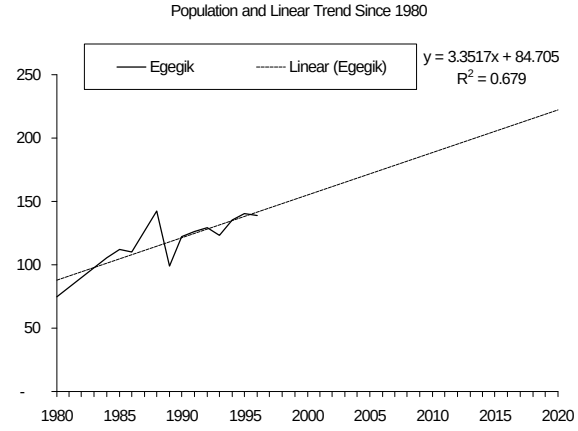


LAKE AND PENINSULA BOROUGH

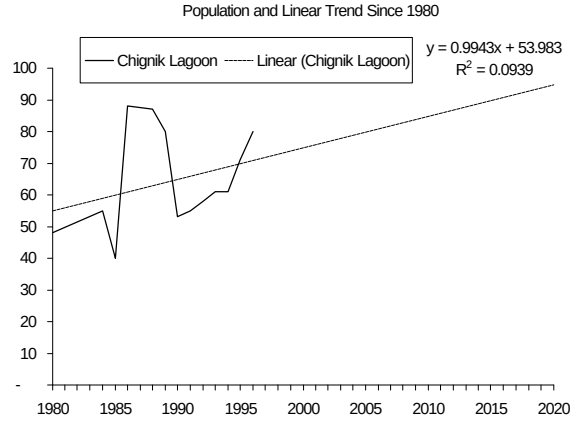
Chignik



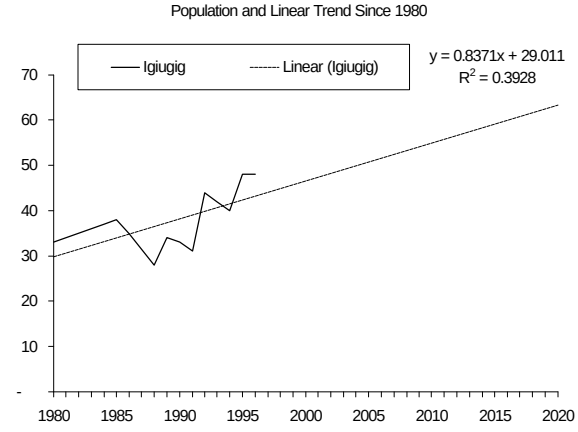
Egegik



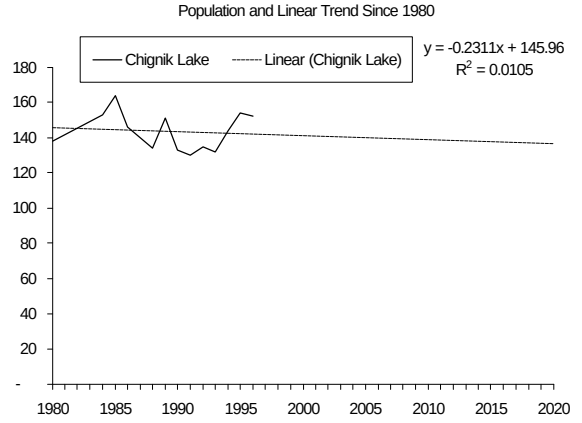
Chignik Lagoon



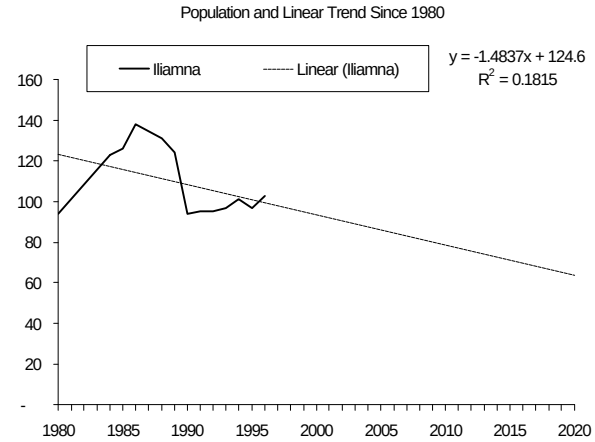
Igiugig



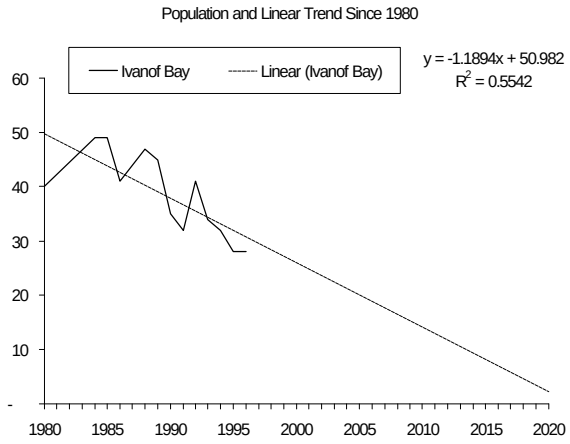
Chignik Lake



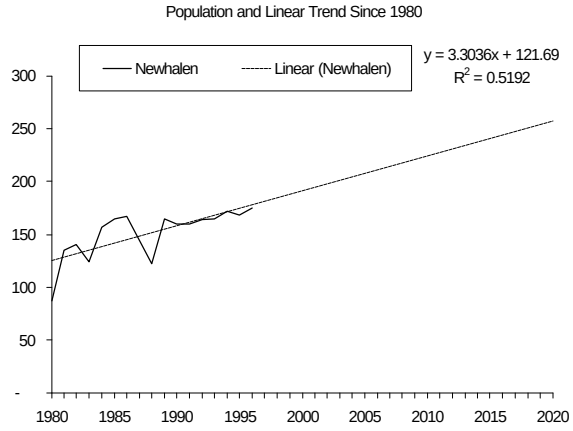
Iliamna



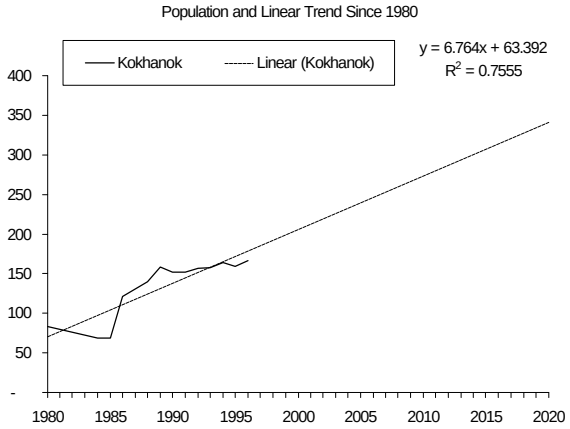
Ivanof Bay



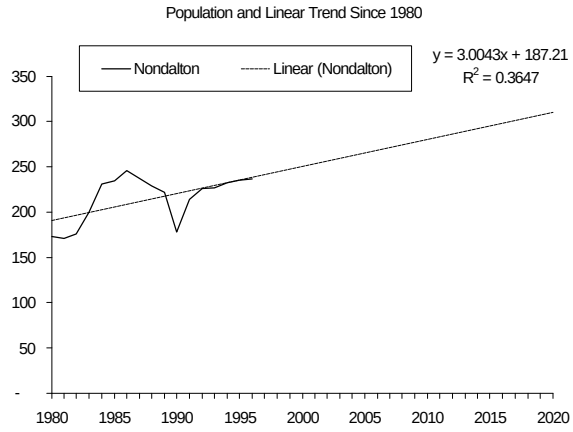
Newhalen



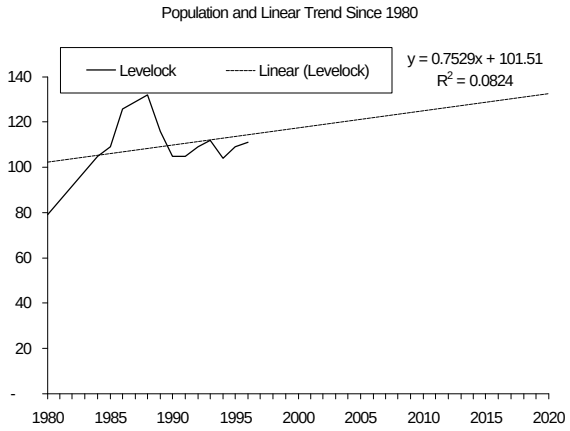
Kokhanok



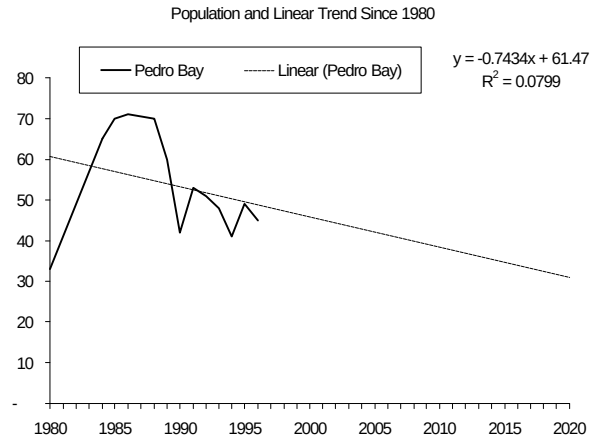
Nondalton



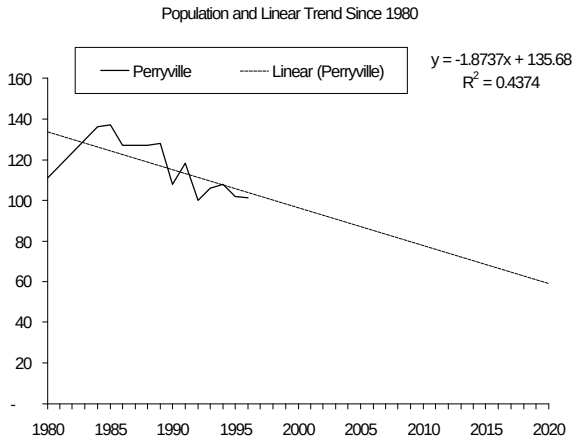
Levelock



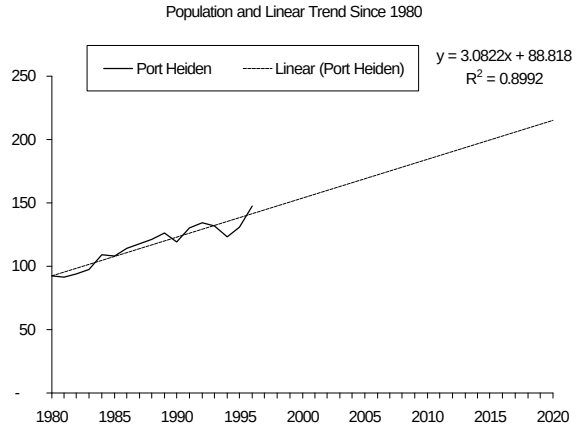
Pedro Bay



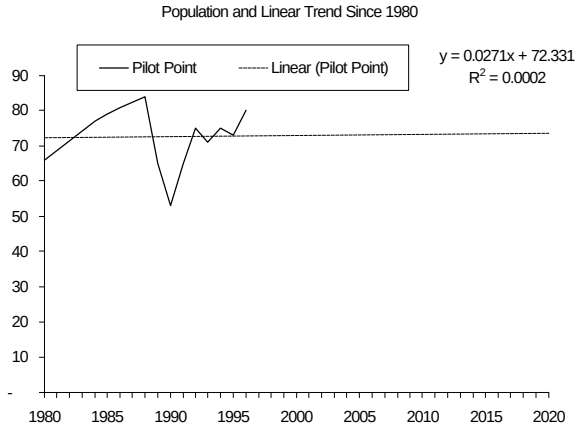
Perryville



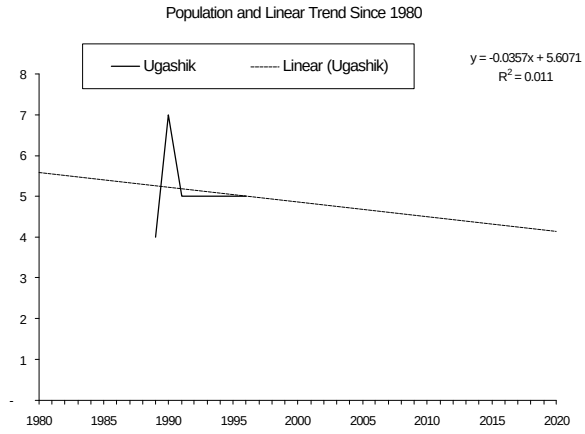
Port Heiden



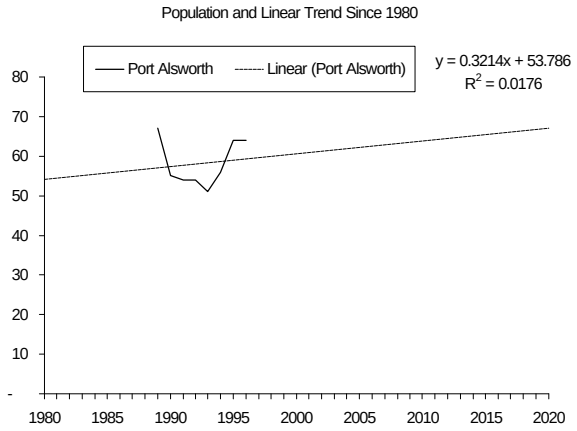
Pilot Point



Ugashik



Port Alsworth



APPENDIX B. VISITOR ATTRACTIONS/ACTIVITIES BY COMMUNITY/BOROUGH/SUB-AREA

Table B.1 summarizes the attractions/activities available in specific locations.

Table B.1
Visitor Attractions/Activities Available in Specific Locations

Bristol Bay/Alaska Peninsula	
Communities	
Dillingham	Gateway community to Togiak Wildlife Refuge, Wood-Tikchik state park, Nushagak River/Portage Creek fishing area and wilderness lodges. In-town attractions include small museum (Sam Fox), Chamber of Commerce/Visitor info. center, 2 hotels, B&B's, stores and restaurants, cannery tour, historic buildings. Several tour companies base day trips out of Dillingham, offering boat tours to the Walrus Islands, kayak trips into surrounding lakes, fishing. Small local road network including road to Aleknagik village/Aleknagik Lake.
King Salmon/ Naknek	Gateway community to Katmai NP, Alaska Peninsula Refuge, Kvichak River drainage/Iliamna area, and wilderness lodges. In town attractions include visitor information center, small museum, several hotels, lodges and numerous guides and outfitters offering fishing on the Naknek River, and other locations. Small local road network provides access between KS and Naknek, east to Naknek Lake.
Iliamna/ Newhalen	Gateway to Lake Clark, Iliamna region. Small communities with several B&B's, hotels, a collection of lodges and a small store. Road allows access to fishing, boating along Newhalen River, Tazimina drainage
Togiak	Gateway to adjacent National Wildlife Refuge, Walrus Islands Sanctuary. Small community with limited lodging, restaurant, store.
other villages	Over 20 small villages are located in the Bristol Bay/Alaska Peninsula area. Nearly all can be reached by scheduled commercial air service. Currently these villages offer limited or no visitor services such as lodging.
Parks/Refuges	
Katmai N.P.	Large system of lakes, excellent wildlife viewing and fishing. Specific destinations include Brooks River (campground, lodge, world famous bear viewing), Valley of 10,000 Smokes, 5 fishing lodges, Alagnak Wild River. Katmai's Pacific coast is increasingly popular destination for day and overnight bear viewing trips.
Lake Clark N.P.	Largely wilderness area National Park, center of activity is Port Alsworth on Lake Clark's southern shore. Activities include hiking, fishing and hunting, boating and river floating (Chilikadrotna, Tlikakila Rivers).

Table B.1 (cont.)

Aniakchak National Monument	Rugged wilderness park focused around 2000' deep Aniakchak Caldera. Activities include wildlife viewing, hiking, and an option to float the Aniakchak Wild River through break in the caldera wall to Aniakchak Bay.
Togiak National Wildlife Refuge	Mix of coastal and mountainous wilderness, surrounding set of villages. Sport-fishing is predominate tourism use.
Becharof National Wildlife Refuge	Straddles the AK peninsula with mountains/volcanoes on the pacific side, tundra wetlands on Bristol Bay. Sport hunting for bear and caribou and sportfishing for salmon and trout are primary recreational uses. Like all these large reserved areas, archeological sites are numerous, in this case a set of ancient sites at Ugashik Lakes and connecting Becharof and the site of Kanatak village.
Alaska Peninsula National Wildlife Refuge	Just another huge (over 4 million acres) expanse of rugged, spectacular, little known Alaskan wilderness. Includes 8000' Veniaminof Volcano; primary uses are hunting for bear, caribou, moose plus sportfishing. Surrounds three Chignik villages, Perryville.
Wood Tikchik State Park	Largest state park in the US, with "freshwater fjords" – two systems of large lakes. Lakes extend into steep, glacier carved mountains on the west, and into the broad Nushagak River lowlands on the east. Activities include sportfishing, boating and kayaking, hiking.
Walrus Island State Game Sanctuary	Series of small islands NW of Dillingham, includes Round Island, a hauling out area for up to 8000 walrus. Access limited by restrictive permit system, uncertain weather.
Kodiak	
Communities	
Kodiak	Gateway community to Kodiak Archipelago, Kodiak Refuge, Shuyak State Park, Katmai Coast, at least 18 lodges. In town attractions include visitor information center, Alutiiq Museum & Alutiiq Dancers, Baranof Museum, Holy Resurrection Church, Veniaminof Museum, shops, hotels & B&B's, tourist services. A number of tour companies offer charter fishing boats, kayak rentals and drop-offs, and other day/overnight trips. Road system provide access to regional attractions, including Pasagshak beach, and Fort Abercrombie State Historic Park & other sites with WWII gun emplacements.
other villages	Kodiak has 6 villages offer varying degrees of attractions and services for visitors. Old Harbor, for example, has a hotel, restaurant, and guided and unguided fishing and hikes.
Parks/Refuges	
Kodiak Refuge	This refuge encompasses the diverse landscapes of the Kodiak Archipelago, from the forest covered Afognak Island to the tundra at the Island's southwestern tip. Primary activities are bear viewing and hunting, and sportfishing

Table B.1 (cont.)

Shuyak State Park	Recently expanded state park with public use cabins, fishing, hunting and protected sea kayaking.
Other State Parks, Rec. Areas	Afognak Island State Park, Buskin River State Recreation Area, Fort Abercrombie State Historic Park, Pasagshak State Recreation Area
Aleutian Islands and Pribilof Islands	
Communities	
Unalaska/ Dutch Harbor	Gateway community to Aleutian archipelago, Alaska Maritime National Refuge. In-town attractions include bird watching, an active archeological dig, WWII history, Russian Orthodox church, artwork and cultural displays at the school, fishing, hiking and strolling. Guided or unguided day trips from town include fishing for halibut and other species, sea kayaking, "bear free" backpacking, mountain biking. A short local road system is available for seeing the town. Unalaska has a number of hotels, restaurants, and other visitors services.
other villages	A number of smaller communities and villages are located along the Aleutian chain. Several of these, such as Akutan, are beginning to develop tourism services.
St. Paul	World famous bird watching for over 200 species, plus hiking, culture-based tours, opportunities for viewing other wildlife. One primary hotel/restaurant, with limited other tourism services.
Parks/Refuges	
Alaska Maritime National Wildlife Refuge	A 3.5 million refuge that takes in nearly all of the over 100 rugged, inaccessible islands and islets that make up the Aleutian archipelago. Refuge is one of the worlds most diverse, productive marine habitats, with millions of marine birds, seals, seal lions, walrus and otters.

APPENDIX C. SERVICE SCHEDULES FOR MAJOR MARINE FREIGHT OPERATORS FOR COMMUNITIES BOTH INSIDE AND OUT OF THE SOUTHWEST ALASKA REGION

Table C.1
Existing Marine Freight Service – All Ports

Carrier	Coastal Transportation	Crowley Marine Services, Inc.	Northland Services, Inc.	Samson Tug & Barge	SeaLand Service	Western Pioneer	American President Lines
Frequency of Service	Jan 1-Nov 15 Weekly Nov 16-Dec 31 Bimonthly	April– September Only	April– September Only	Year-Round Service–Weekly May–September	Year-Round Service	Supplemented During Fishing Season	Year-Round Service
Port	Apr-Aug Twice Weekly						
Akutan	Weekly					Every 10 days	
Aleknagik		Village service* provided via Dillingham	Service provided via Bristol Bay villages				
Alitak		3 times per season					
Anchorage		4 times per season	6 times per season		Bi-Weekly		
Barrow		1 time per season					
Beaver Inlet	Weekly						
Bethel		6 times per season	5 times per season				
Bethel Coast Villages		1 time per season	2 times per season				
Big Creek/ISA		2 times per season	2 times per season				
Brisol Bay Villages		2 times per season	8 times per season				
Bristol Bay		1 time per season					
Captain Bay	Weekly						
Chignik	Weekly	2 times per season				Every 10 days	
Clarks Point		3 times per season					
Coffee Point			2 times per season				
Cold Bay	Weekly					Every 10 days	
Dillingham		7 times per season	9 times per season				
Egegik		2 times per season	4 times per season				
Ekuk			3 times per season				
Ekwok		Village service* provided via Dillingham	Service provided via Bristol Bay villages				
False Pass	Weekly					Every 10 days	
Igiugig			Service provided via Bristol Bay villages				
Illiamna			Service provided via Bristol Bay villages				
King Cove	Weekly			Bi-Weekly		Every 10 days	
Kodiak		1 time per season		Bi-Weekly	Bi-Weekly	Every 10 days	
Kodiak Island		3 times per season					
Koliganek		Village service* provided via Dillingham	Service provided via Bristol Bay villages				
Kotzebue		4 times per season					
Kotzebue Sound Villages		1 time per season					
Kuskokwim River Villages		6 times per season	4 times per season				
Larsen Bay						Every 10 days	
Levelock			Service provided via Bristol Bay villages				
Lower Yukon/ Yukon River Villages		3 times per season	4 times per season				
Manokotak		Village service* provided via Dillingham	Service provided via Bristol Bay villages				
Naknek		7 times/season (incl. occasional village svc)	9 times per season				
Nelson Lagoon		1 time per season					
New Stuyahok		Village service* provided via Dillingham	Service provided via Bristol Bay villages				
Newhalen			Service provided via Bristol Bay villages				
Nome		5 times per season	4 times per season				

Table C.1 (cont.)

Carrier / Frequency of Service / Port	Coastal Transportation Jan 1-Nov 15 Weekly Nov 16-Dec 31 Bimonthly Apr-Aug Twice Weekly	Crowley Marine Services, Inc. April–September Only	Northland Services, Inc. April–September Only	Samson Tug & Barge Year-Round Service–Weekly May–September	SeaLand Service Year-Round Service	Western Pioneer Supplemented During Fishing Season	American President Lines Year-Round Service
Norton Sound Villages		3 times per season	3 times per season				
Old Harbor						Every 10 days	
Ouzinkie						Every 10 days	
Pederson Point			2 times per season				
Pedro Bay			Service provided via Bristol Bay villages				
Pilot Point		Village service provided via Naknek					
Port Bailey		2 times per season					
Port Heiden		Village service provided via Naknek					
Port Hope		2 times per season					
Port Lay		2 times per season					
Port Lions						Every 10 days	
Port Moller		4 times per season				Every 10 days	
Saint Paul	Weekly					Every 10 days	
Sand Point	Weekly		2 times per season			Every 10 days	
Seattle	Weekly	Varies	Varies	Bi-Weekly	Weekly	Every 10 days	
South Naknek		5 times per season					
Togiak			2 times per season				
Uganik						Every 10 days	
Ugashik		Village service provided via Naknek					
Unalaska (Dutch Harbor)	Weekly			Bi-Weekly	Bi-Weekly	Every 10 days	Weekly
Wainwright		2 times per season					
Warren			1 time per season				

** Village service is subject to sufficient cargo*

APPENDIX D. FURTHER DETAIL ON TOTAL INBOUND AND OUTBOUND MARINE SHIPMENTS: CONSUMABLES, BUILDING MATERIALS, LUMBER, AND OTHER

Table D.1
Consumables Traffic by Port and Year

Incoming Consumables by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	0		2	2	0	0					**4**
Chignik	0	4	1	0	0	1					**6**
Cold Bay	1	0	0	0	0	0					**1**
Dillingham	1	1	1	1	0	0	0	0	1	0	**5**
Egegik	0	0	0	0	0	0	0	0	0	0	**0**
False Pass	0	0	0	0	0	0					**0**
King Cove	0	1	2	1	0	0	0	0	0	0	**4**
Kodiak	3	13	7	4	5	0	1	24	32	29	**118**
Naknek	1	2	2	2	1	2	2	2	2	2	**18**
Old Harbor	0	0	0		0	0	0	0		0	**0**
Port Lions	0	0	0	0	0	0					**0**
Sand Point	0	1	0	0	0	0	0	0	0	0	**1**
Seldovia							0				**0**
Unalaska	3	8	22	8	7	8	10	35	46	38	**185**
Total/Year	**9**	**30**	**37**	**18**	**13**	**11**	**13**	**61**	**81**	**69**	

Outgoing Consumables by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	0	0			4						**4**
Chignik		0									**0**
Cold Bay											
Dillingham			0								**0**
Egegik											
False Pass		0									**0**
King Cove			0			0	0				**0**
Kodiak		5	8	14	0	1	0	0	12	1	**41**
Naknek					0	0	0	0			**0**
Old Harbor											
Port Lions											
Sand Point		0									**0**
Seldovia							0				**0**
Unalaska	16	2	2	11	41	61	88	68	56	63	**408**
Total/Year	**16**	**7**	**10**	**25**	**45**	**62**	**88**	**68**	**68**	**64**	

* *Note that in 1990 Waterborne Commerce Statistics changed its data collection methods and started recording data in short tons. An entry of "0" after 1990 indicates that less than 500 Short Tons was reported. If nothing is recorded in a column, no activity was reported. Also note that these totals are included in the totals of All Other Commodities in Table 4.26t.*

Table D.2
Building Materials Traffic by Port and Year

Incoming Building Materials by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan			1								**1**
Chignik											
Cold Bay			0								**0**
Dillingham	0	0	0	0	0	0	0	0	0	0	**0**
Egegik			0	0			0	0			**0**
False Pass											
King Cove							1	0			**1**
Kodiak	0	0	1	0	2	0		316	0		**319**
Naknek	1	1	0	1	0	0	0	0	0	2	**5**
Old Harbor											
Port Lions											
Sand Point								0		0	**0**
Seldovia											
Unalaska	4		1	14		6	0	0	0	0	**25**
Total/Year	**5**	**1**	**3**	**15**	**2**	**6**	**1**	**316**	**0**	**2**	

Outgoing Building Materials by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan											
Chignik											
Cold Bay			1								**1**
Dillingham						0	0				**0**
Egegik											
False Pass											
King Cove											
Kodiak	0	0	0	0					0	0	**0**
Naknek			0				0	0			**0**
Old Harbor											
Port Lions											
Sand Point											
Seldovia											
Unalaska	0		1				0	0	0	0	**1**
Total/Year	**0**	**0**	**2**	**0**		**0**	**0**	**0**	**0**	**0**	

* *Note that in 1990 Waterborne Commerce Statistics changed its data collection methods and started recording data in short tons. An entry of "0" after 1990 indicates that less than 500 Short Tons was reported. If nothing is recorded in a column, no activity was reported. Also note that these totals are included in the totals of All Other Commodities in Table 4.26t.*

Table D.3
Lumber Traffic by Port and Year

Incoming Lumber & Timber Products by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	0		0		0						**0**
Chignik			0								**0**
Cold Bay	0			0		0					**0**
Dillingham	2	2	1	1	0	1	1	0	4	2	**14**
Egegik	0	0	0	0	0	0	0	0	0	0	**0**
False Pass	0	0									**0**
King Cove		0	0	0	0	0	0	0	0	0	**0**
Kodiak	9	5	3	2	0	0	0		14		**33**
Naknek	1	2	2	3	1	3	3	1	5	2	**23**
Old Harbor		0	0							0	**0**
Port Lions				0							**0**
Sand Point	1	0	0	0	0	0	0	0	0	0	**1**
Seldovia							0		0	0	**0**
Unalaska	0	2	0	3	0	1	0	0	0	0	**6**
Total/Year	**13**	**11**	**6**	**9**	**1**	**5**	**4**	**1**	**23**	**4**	

Outgoing Lumber & Timber Products by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan											
Chignik											
Cold Bay											
Dillingham		0	0	0		0	0	0	0	0	**0**
Egegik										0	**0**
False Pass											
King Cove			0								**0**
Kodiak	0	0	0	0	17	59	0		14	0	**90**
Naknek	0	0	0	0	0	0	0	0	0	0	**0**
Old Harbor											
Port Lions											
Sand Point		0									**0**
Seldovia									0		**0**
Unalaska	0	0	0	0		22	9	10	63	25	**129**
Total/Year	**0**	**0**	**0**	**0**	**17**	**81**	**9**	**10**	**77**	**25**	

* *Note that in 1990 Waterborne Commerce Statistics changed its data collection methods and started recording data in short tons. An entry of "0" after 1990 indicates that less than 500 Short Tons was reported. If nothing is recorded in a column, no activity was reported. Also note that these totals are included in the totals of All Other Commodities in Table 4.26t.*

Table D.4
Other Commodities Traffic by Port and Year

All Other Commodities Incoming by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	2	3	4	4	2						**15**
Chignik	0	1	1	0	0	1					**3**
Cold Bay	2	0	0	0	0	0					**2**
Dillingham	5	1	2	2	0	1	0	0	2	1	**14**
Egegik	0	0	0	0	0	0	0	0	0	0	**0**
False Pass	0	0	0	0	0	0					**0**
King Cove	0	2	3	2	0	1	0	1	0	0	**9**
Kodiak	32	243	37	44	40	23	240	314	380	10	**1363**
Naknek	4	4	5	4	2	2	3	2	3	2	**31**
Old Harbor	0	0	0	0	0	0	0	0			**0**
Port Lions	0	0	0	0	0	0					**0**
Sand Point	1	2	2	2	2	3	3	2	2	1	**20**
Seldovia	0					0	0				**0**
Unalaska	8	13	19	32	6	39	34	7	5	3	**166**
Total/Year	**54**	**269**	**73**	**90**	**52**	**70**	**280**	**326**	**392**	**17**	

All Other Commodities Outgoing by Port and Year (in thousands of tons)

	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	Total/Port
Akutan	1	2	3	2	24						**32**
Chignik	0	0	0	0							**0**
Cold Bay	0	0	0	0							**0**
Dillingham	0	1	1	1	0	0	0	0	0	0	**3**
Egegik		0		0						0	**0**
False Pass	0	0	1	0							**1**
King Cove	0	0	1	1				0	0	0	**2**
Kodiak	7	18	34	18	117	296	240	17	380	467	**1594**
Naknek	2	1	0	1	0	0	0	0	0	0	**4**
Old Harbor	0										**0**
Port Lions	0	0	0								**0**
Sand Point	0	0	0	0	0	0	0	1	0	0	**1**
Seldovia			0								**0**
Unalaska	1	3	12	9	0	0	0	27	24	0	**76**
Total/Year	**11**	**25**	**52**	**32**	**141**	**296**	**240**	**45**	**404**	**467**	

* *Note that in 1990 Waterborne Commerce Statistics changed its data collection methods and started recording data in short tons. An entry of "0" after 1990 indicates that less than 500 Short Tons was reported. If nothing is recorded in a column, no activity was reported. Also note that these totals are included in the totals of All Other Commodities in Table 4.26t.*

APPENDIX E. VISITOR TRAVEL TO INDIVIDUAL SOUTHWEST ALASKA LOCATIONS

VISITATION TO STATE PARKS AND REFUGES

Round/Walrus Islands

In the last several years, visitation has been slightly down. The area has been visited by 200-300 people per year.

Wood-Tikchik State Park

Approximately 6,000 people visit Wood-Tikchik State Park in a typical season. The majority of these visits are guided anglers, arriving by plane from fly-out fishing lodges. Guided visitation, largely made up of out-of-state visitors, increased dramatically in the late 1980s and then leveled or even declined. Unguided visitation is growing faster, at an estimated 10 percent per year.

Table E.1
Visitation to Parks and Refuges

	1980	1984	1988	1992	1993	1994	1995
Katmai *	11,824	20,074	45,710	46,196	53,274	55,728	55,728
Lake Clark	N/A	10,000	N/A	10,000	12,153	12,143	12,698
Aniakchak	N/A	N/A	800	1,638	1,599	1,193	1,193

** Fastest growing visitation of any Alaska park unit.*
Source: National Park Service.

Table E.2
Becharof Refuge – Guided Hunting and Fishing

Hunting	**1987**	**1989**	**1990**	**1991**
Big Game Clients	504	360	328	309
Big Game Use Days	3,304	3,034	2,493	2,604
Fishing	**1987**	**1989**	**1990**	**1991**
Sport Fish Clients	597	868	1,253	886
Sport Fish Use Days	1,983	2,709	3,786	3,451
Total Use Days	**5,287**	**5,743**	**6,279**	**6,055**

Source: Alaska Peninsula/Becharof Public Use Management Plan, 3/93.

Table E.3
Becharof Refuge – Growth in Licensed Commercial Operators

	1982	1988	1992
Becharof Big Game Guides	33	36	26
Fishing Guides	0	19	16
Transporter	0	6	13
Total	33	61	55

Table E.4
King Salmon Visitor Center Total Use/Change in Use by Season

Month	**1992**	**1993**	**1994**
January		96	112
February		37	49
March		95	54
April		122	111
May	702	279	286
June	1,321	1,140	1,555
July	2,295	2,132	2,914
August	1,301	1,425	1,625
September	720	809	1,302
October	199	272	105
November	67	89	95
December	205	276	250
Total	**6,810**	**8,765**	**10,452**

Table E.5
Growth in Numbers of Anglers Statewide

	1983	**1986**	**1990**	**1994**
Alaska Residents	225,000	250,000	250,000	240,000
Non-Residents	80,000	110,000	175,000	220,000

Source: Alaska Department of Fish and Game.

Table E.6
Growth in Sportfishing Angler-Days – Bristol Bay

Region	1977	1984	1988	1992	1995
Eastern	17,653	39,394	40,987	69,310	73,779
Central	7,184	11,160	19,840	26,621	37,531
Western	675	11,732	18,767	7,842	9,926
Northwestern	–	1,532	2,814	6,744	7,230
Total	**25,512**	**63,818**	**82,408**	**110,517**	**128,466**

Source: Alaska Department of Fish and Game Area Mgt. Report, Feb 93.
Note: Excludes Aleutians west of Ugashik Lakes, Kodiak and streams draining into Shelikof Strait.

Table E.7
Increase in Moose Harvests (Game Unit 17B,17C)

	1991	1992	1993	1994	1995
Local Residents	116	104	105	128	144
Non-Local State Residents	74	86	49	70	88
Non-Residents	67	64	93	91	114
Total	**257**	**254**	**247**	**289**	**346**

Source: Alaska Department of Fish and Game

APPENDIX F. AMHS RIDERSHIP DATA FOR EACH INDIVIDUAL PORT-OF-CALL IN THE STUDY AREA

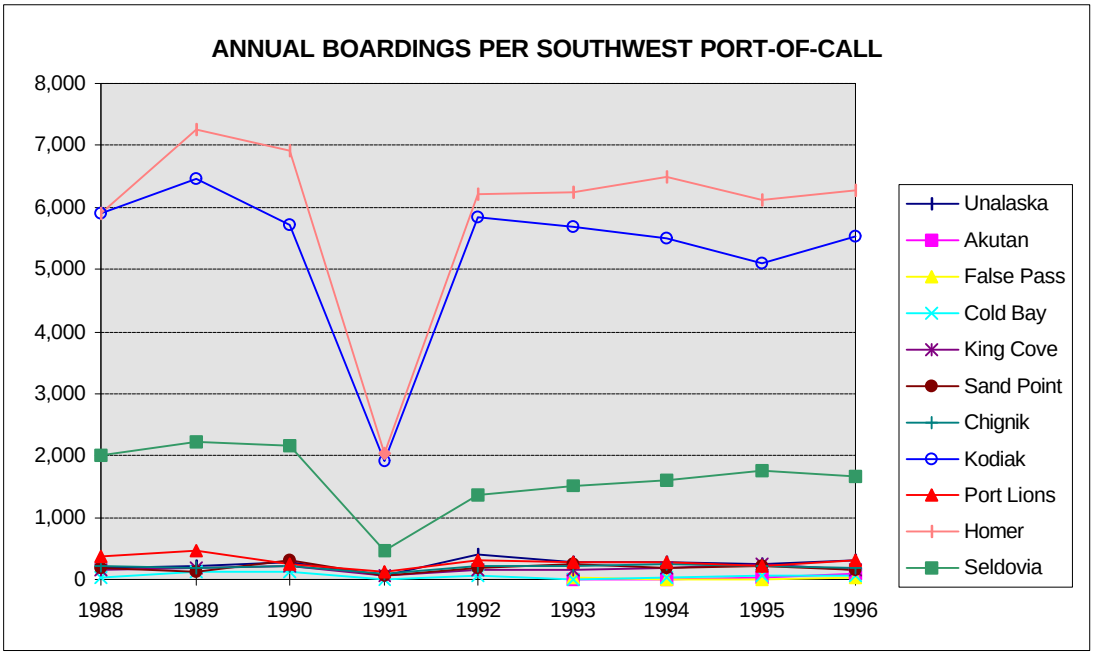
AMHS ANNUAL BOARDINGS

Table F.1
AMHS Annual Boardings by Port-of-Call – 1988-1996

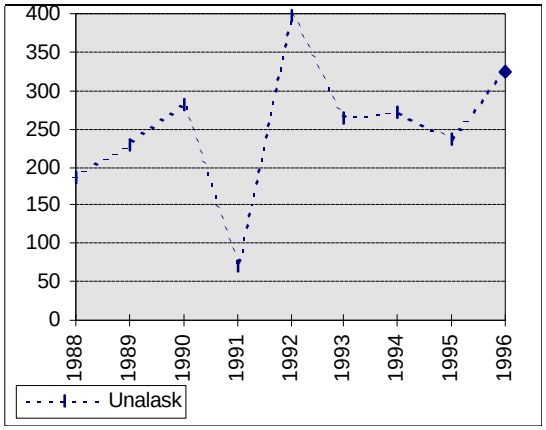
Port of Call	1988	1989	1990	1991	1992	1993	1994	1995	1996	Subtotal
Unalaska	185	228	282	71	398	265	272	236	324	2,261
Akutan						14	2	25	96	137
False Pass						35	4	7	19	65
Cold Bay	29	112	118	8	67	9	23	66	60	492
King Cove	156	186	221	47	146	162	197	252	159	1,526
Sand Point	179	125	297	52	193	240	191	231	163	1,671
Chignik	217	176	208	79	207	221	244	215	188	1,755
Kodiak	5,897	6,451	5,721	1,916	5,834	5,679	5,494	5,104	5,541	47,637
Port Lions	366	475	239	130	295	285	293	215	306	2,604
Homer	5,901	7,247	6,906	2,029	6,214	6,252	6,481	6,118	6,265	53,413
Seldovia	2,005	2,213	2,154	463	1,354	1,505	1,619	1,749	1,681	14,743
Seward	3,658	3,644	3,171	791	2,939	3,247	2,588	2,492	2,545	**126,304**
Valdez	12,605	10,596	14,542	13,974	13,888	14,344	14,703	13,773	13,757	
Tatitlek									65	
Chenega Bay									36	
Cordova	4,757	5,729	6,452	5,882	6,043	6,701	6,647	5,642	5,211	
Whittier	9,882	7,682	9,956	10,823	18,278	18,345	18,243	17,582	18,400	
Portage					8,242	7,721	7,892	7,557	7,997	
Anchorage							24			
Subtotal	14,935	17,213	16,146	4,795	14,708	14,667	14,820	14,218	14,802	126,304
Round Trips	6	6	6	3	6	6	6	7	6	

M/V Tustumena only		
1995	***1996***	***mean%***
5,104	5,541	100.0%
215	306	100.0%
6,118	6,265	100.0%
1,749	1,681	100.0%
2,492	2,545	100.0%
1,963	1,890	14.0%
	49	75.4%
	36	100.0%
905	1,049	18.1%
0	0	0.0%
0	0	0.0%
0	0	0.0%

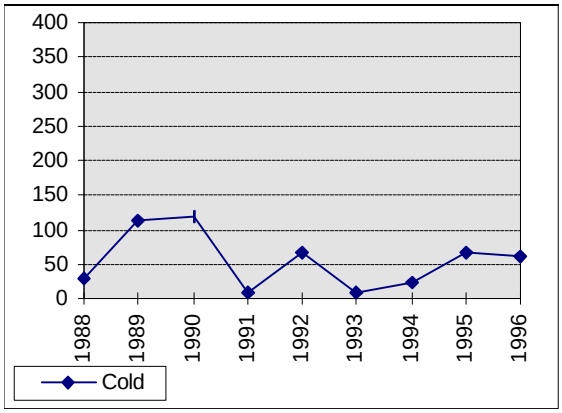
Exhibit F.1
Graph of AMHS Annual Boardings by Port-of-Call – 1988-1996



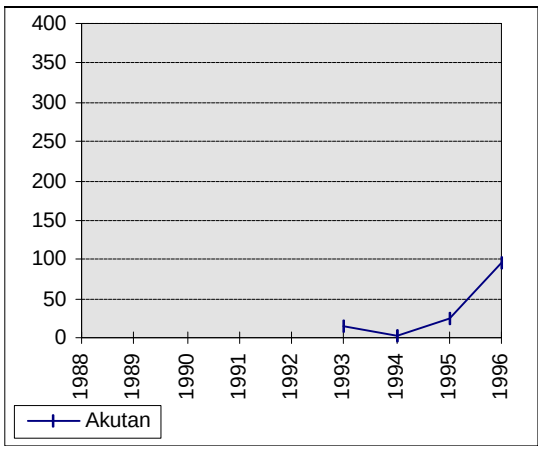
Annual Boardings – Unalaska



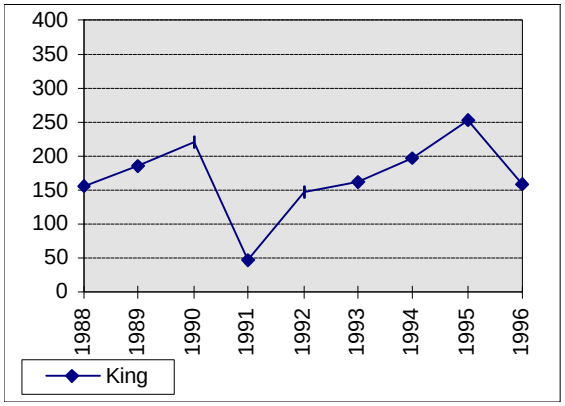
Annual Boardings – Cold Bay



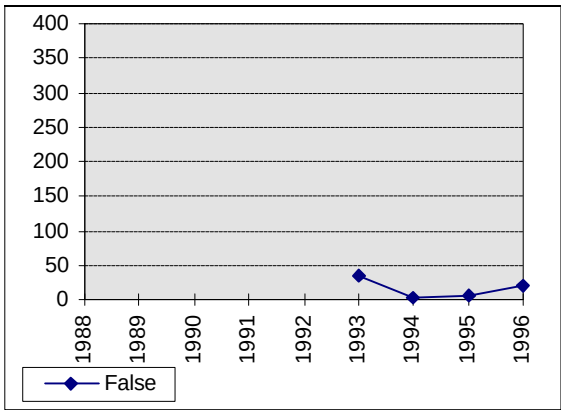
Annual Boardings – Akutan



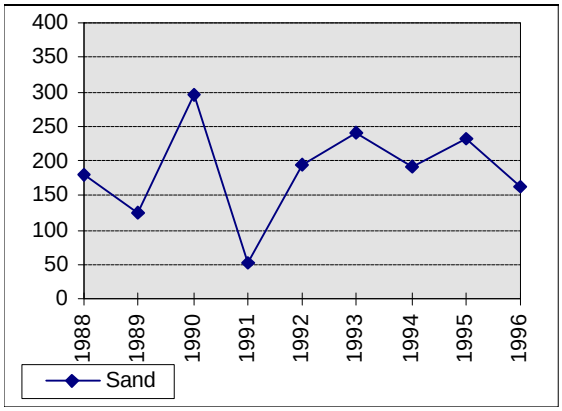
Annual Boardings – King Cove



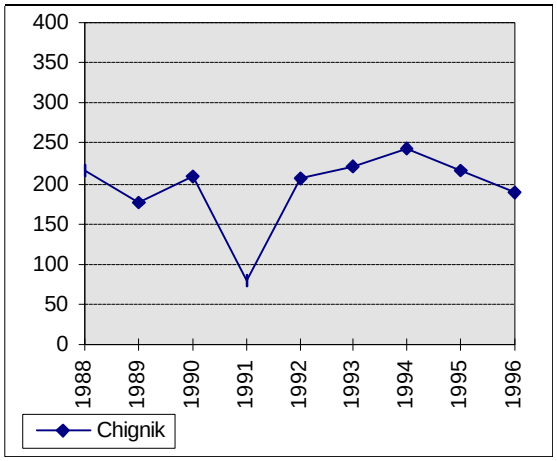
Annual Boardings – False Pass



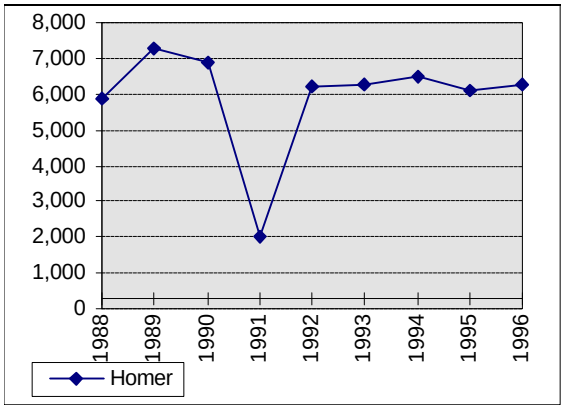
Annual Boardings – Sand Point



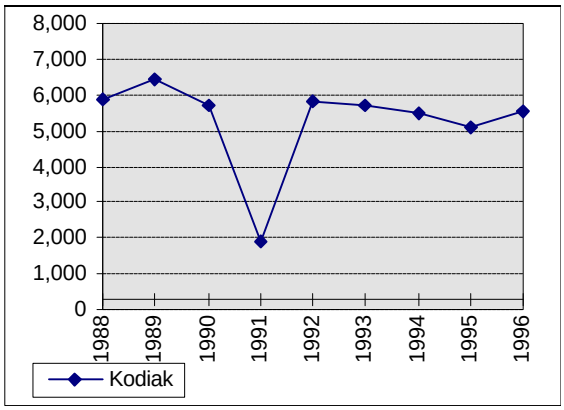
Annual Boardings – Chignik



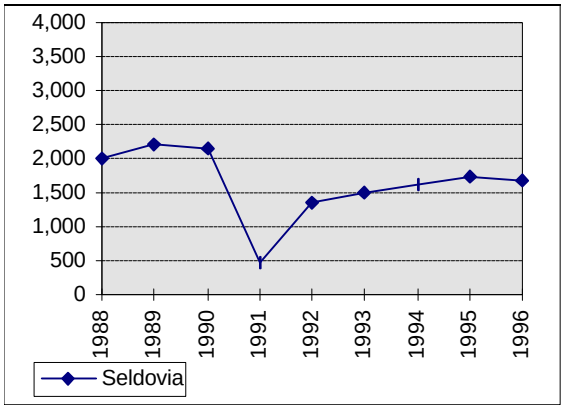
Annual Boardings – Homer



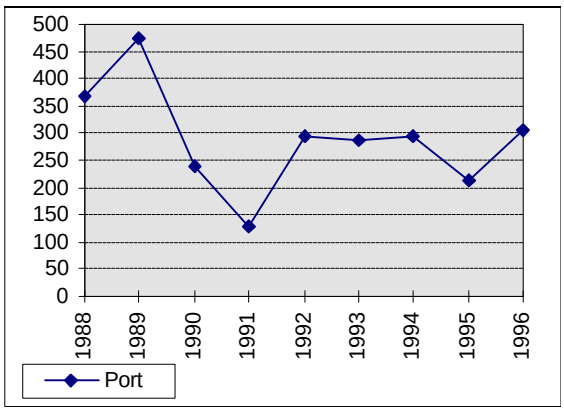
Annual Boardings – Kodiak



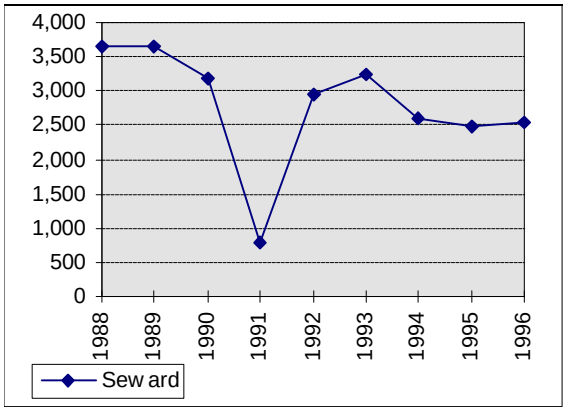
Annual Boardings – Seldovia



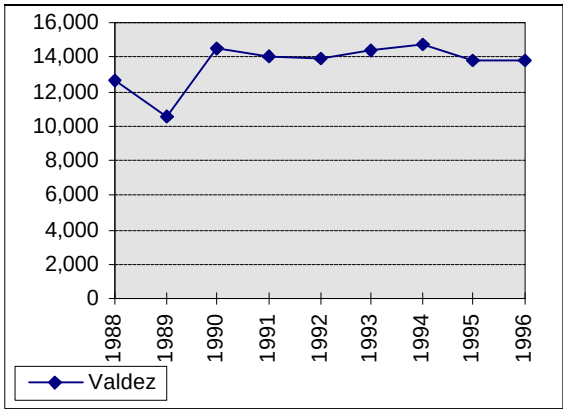
Annual Boardings – Port Lions



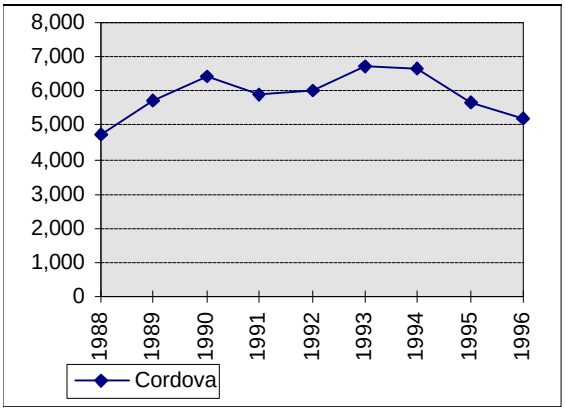
Annual Boardings – Seward



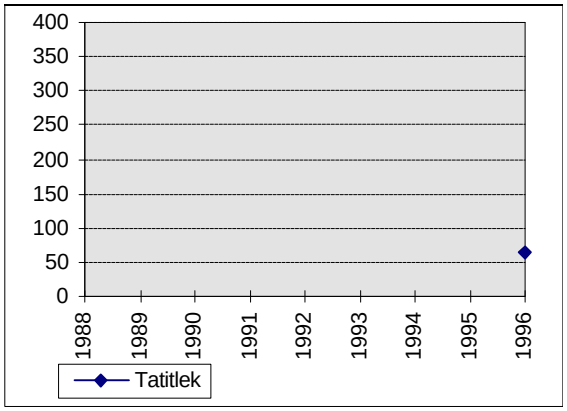
Annual Boardings – Valdez



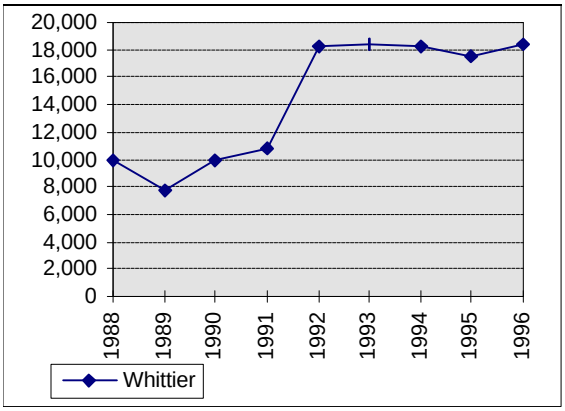
Annual Boardings – Cordova



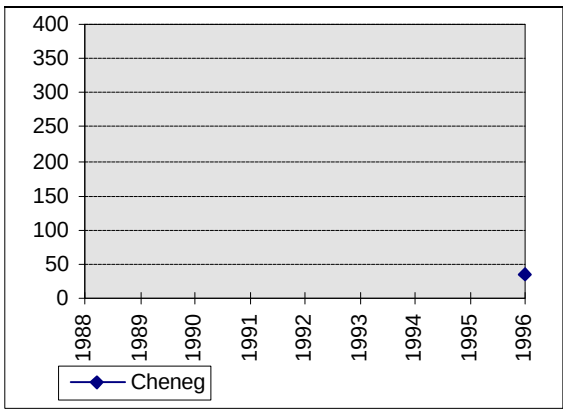
Annual Boardings – Tatitlek



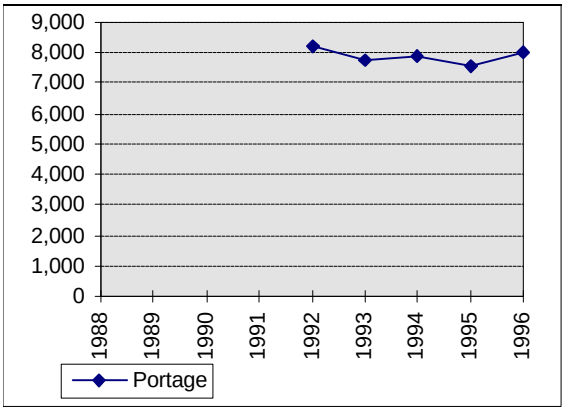
Annual Boardings – Whittier



Annual Boardings – Chenega Bay



Annual Boardings – Portage



Annual Boardings – Anchorage

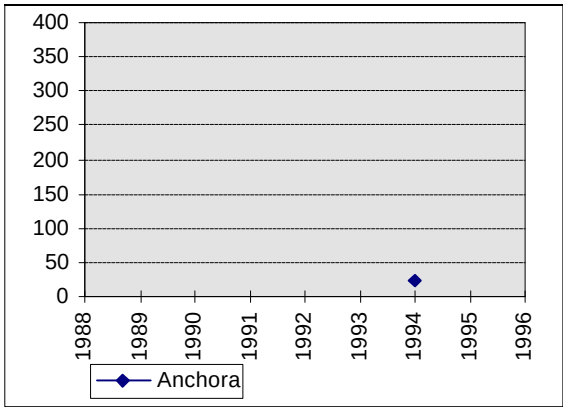
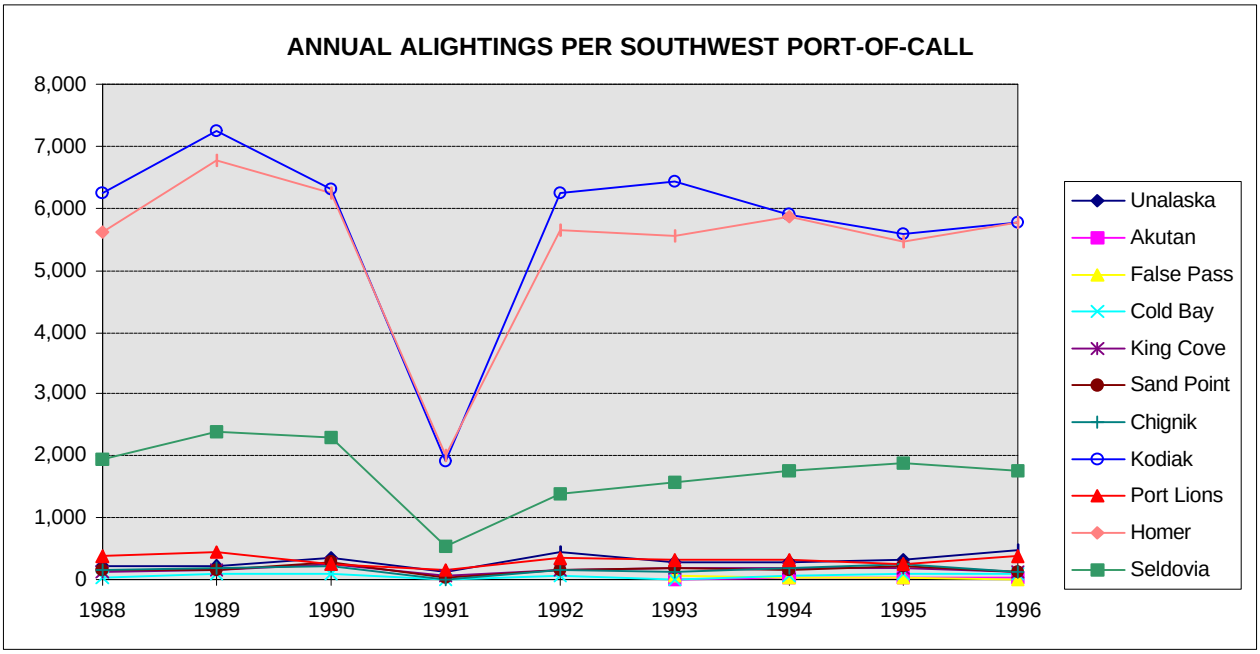


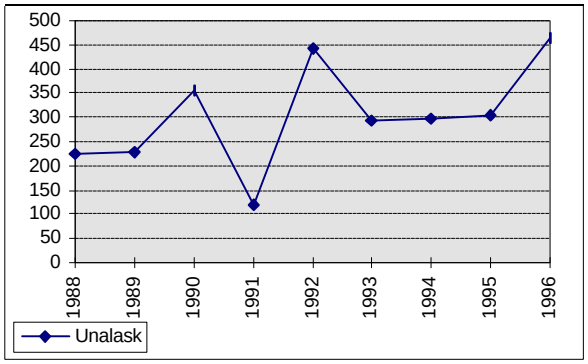
Table F.2
AMHS Annual Alightings by Port-of-Call – 1988-1996

Port of Call	1988	1989	1990	1991	1992	1993	1994	1995	1996	Subtotal	M/V Tustumena only 1995	1996	mean%
Unalaska	223	230	354	119	441	295	298	304	462	2,726			
Akutan						14	17	17	45	93			
False Pass						70	19	29	7	125			
Cold Bay	47	103	98	4	59	15	50	86	84	546			
King Cove	113	172	244	53	172	174	177	174	130	1,409			
Sand Point	169	171	286	44	168	175	164	224	126	1,527			
Chignik	145	183	215	7	157	129	184	236	140	1,396			
Kodiak	6,240	7,255	6,313	1,907	6,229	6,431	5,895	5,590	5,786	51,646	5,590	5,786	100.0%
Port Lions	381	453	240	164	346	308	326	243	361	2,822	243	361	100.0%
Homer	5,605	6,772	6,258	2,009	5,639	5,547	5,863	5,466	5,782	48,941	5,466	5,782	100.0%
Seldovia	1,944	2,371	2,286	542	1,378	1,567	1,750	1,896	1,756	15,490	1,896	1,756	100.0%
Seward	3,811	2,964	3,077	864	3,237	3,221	2,592	2,378	2,593	**126,721**	2,378	2,593	100.0%
Valdez	13,423	11,576	14,544	13,757	13,775	14,316	15,147	13,813	14,109		2,236	2,135	15.7%
Tatitlek									64			46	71.9%
Chenega Bay									90			90	100.0%
Cordova	4,385	6,202	6,878	5,921	6,029	6,626	6,467	5,664	5,126		699	828	14.2%
Whittier	9,351	6,412	9,474	10,874	18,368	17,428	17,426	16,670	17,389		0	0	0.0%
Portage					8,100	8,492	8,440	8,334	8,763		0	0	0.0%
Anchorage							21				0	0	0.0%
Subtotal	14,867	17,710	16,294	4,849	14,589	14,725	14,743	14,265	14,679	126,721			
Ratio B:A	1.005	0.972	0.991	0.989	1.008	0.996	1.005	0.997	1.008	0.997			

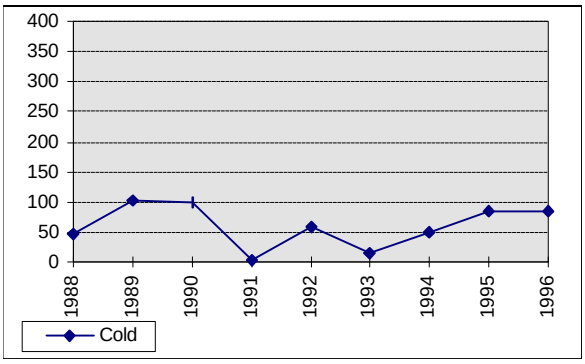
Exhibit F.2
Graph of AMHS Annual Alightings by Port-of-Call – 1988-1996



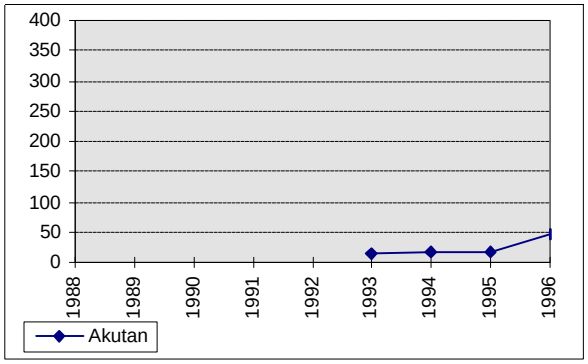
Annual Alightings – Unalaska



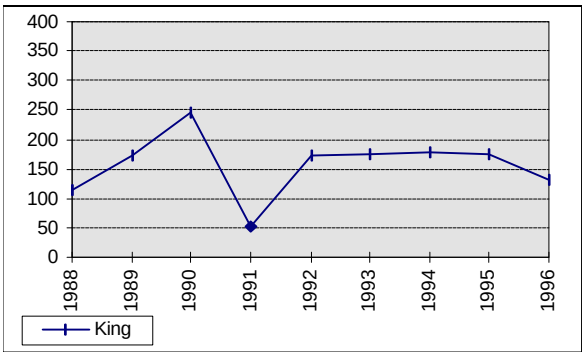
Annual Alightings – Cold Bay



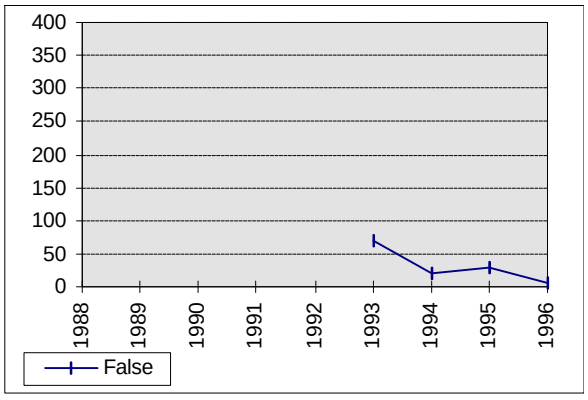
Annual Alightings – Akutan



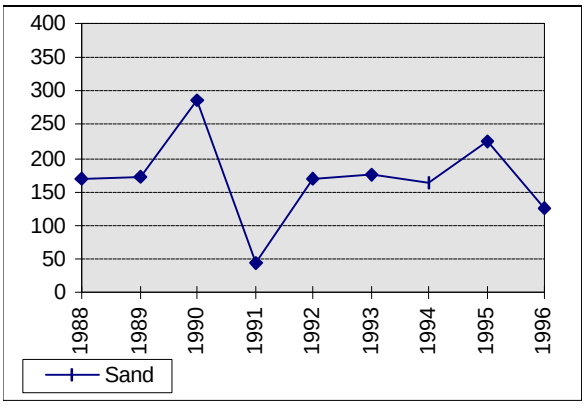
Annual Alightings – King Cove



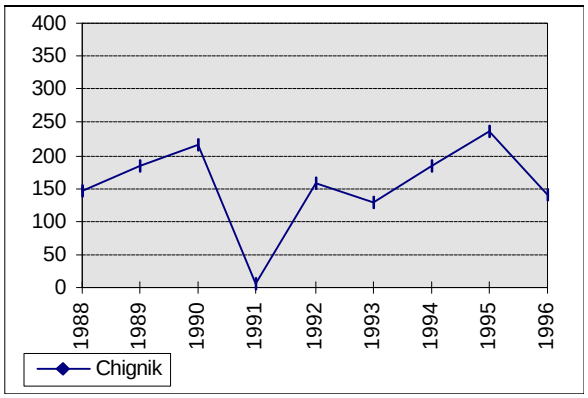
Annual Alightings – False Pass



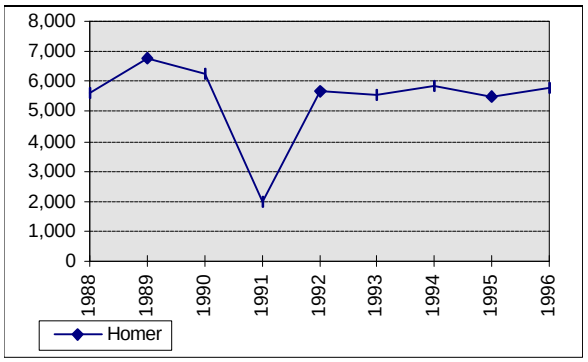
Annual Alightings – Sand Point



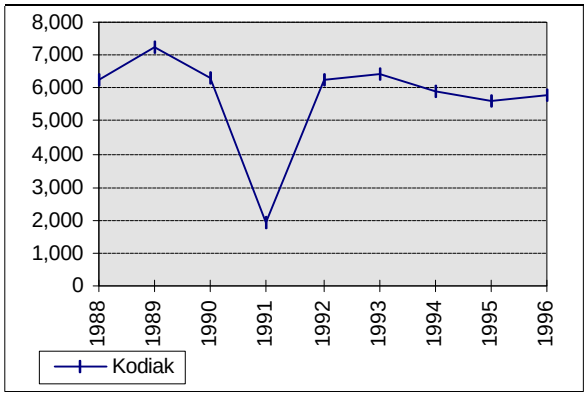
Annual Alightings – Chignik



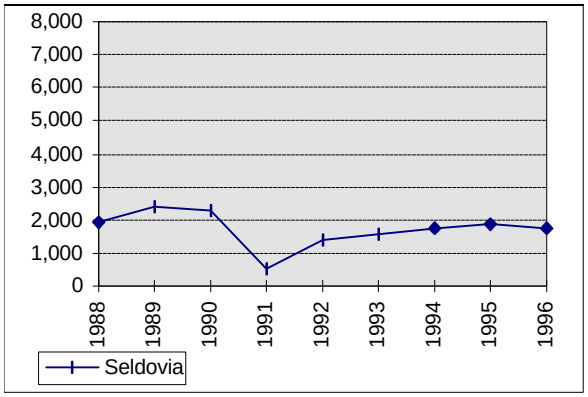
Annual Alightings – Homer



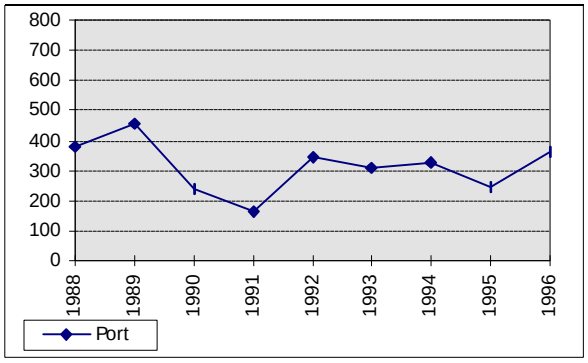
Annual Alightings – Kodiak



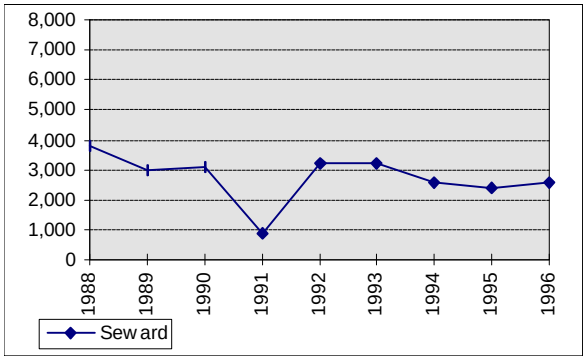
Annual Alightings – Seldovia



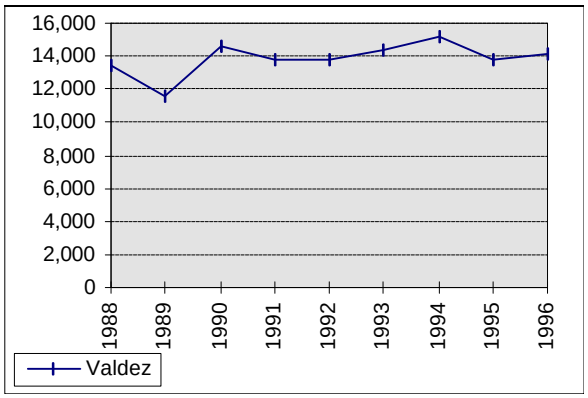
Annual Alightings – Port Lions



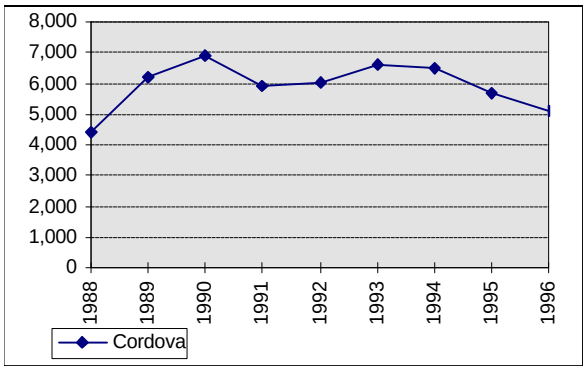
Annual Alightings – Seward



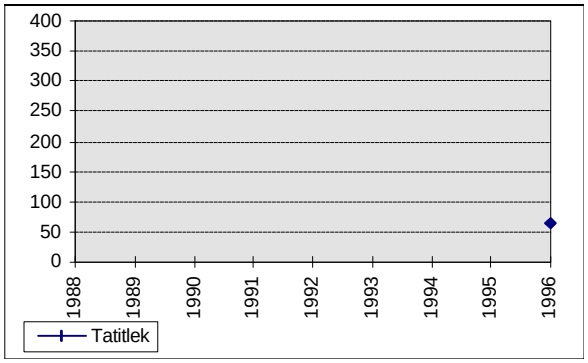
Annual Alightings – Valdez



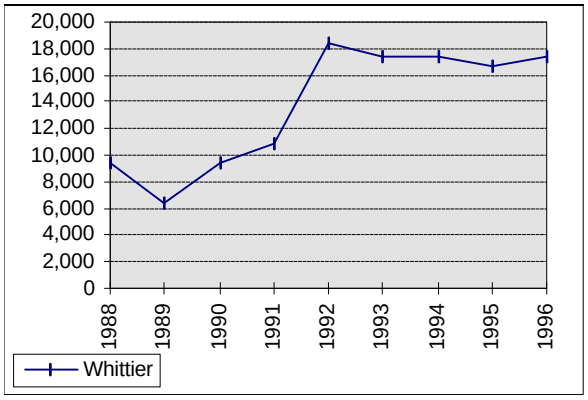
Annual Alightings – Cordova



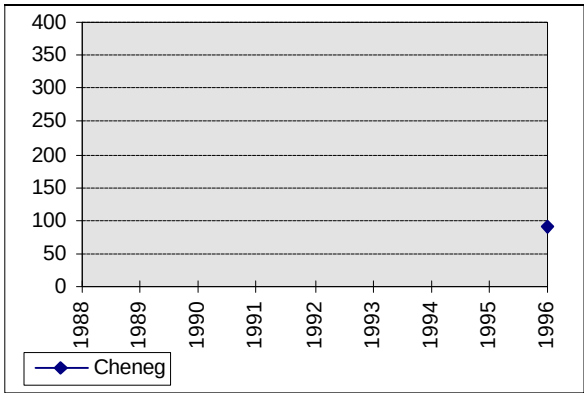
Annual Alightings – Tatitlek



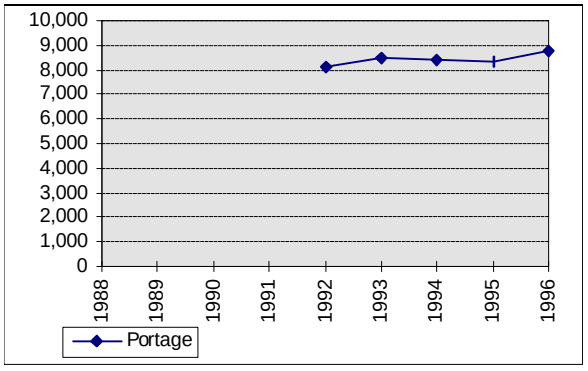
Annual Alightings – Whittier



Annual Alightings – Chenega Bay



Annual Alightings – Portage



Annual Alightings – Anchorage